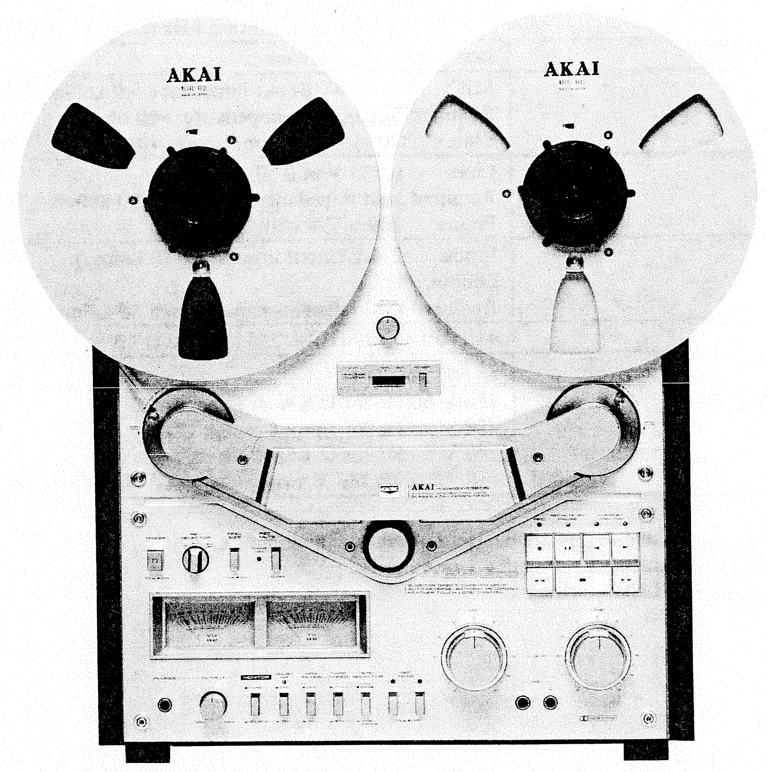
AKAI SERVICE MANUAL



THIS MANUAL MUST BE USED AS A SET TOGETHER
WITH SEPARATELY PUBLISHED GX-635D, GX-636
SERVICE MANUAL AND PARTS LIST.

STEREO TAPE DECK

MODEL GX-636DB

I. SPECIFICATIONS

TRACK SYSTEM	4 Track 2 Channel Stereo System
REEL CAPACITY	Up to 10″ reel
HEADS	GX head for recording × 2 GX head for playback × 2 Erase head × 2
MOTORS	AC Servo motor for capstan drive × 1 AC Eddy current motor for reel drive × 2
TAPE SPEED	19 cm/s ± 0.5% (7-1/2 ips.) 9.5 cm/s ± 1.0% (3-3/4 ips.)
WOW & FLUTTER	Less than 0.03% WRMS, 0.07% DIN 45500 at 19 cm/s Less than 0.04% WRMS, 0.09% DIN 45500 at 9.5 cm/s
TAPE WINDING TIME	75 sec. using 360 m (1,200 ft.) Tape
FREQUENCY RESPONSE	30 to 27,000 Hz ± 3 dB at 19 cm/s 30 to 20,000 Hz ± 3 dB at 9.5 cm/s
SIGNAL TO NOISE RATIO	Better than 65 dB at 19 cm/s (DIN 45500) Dolby NR switch ON: Improves up to 10 dB above 5 kHz (GX-636DB only)
HARMONIC DISTORTION	Less than 0.4% at 19 cm/s
INPUT	MIC: 0.25 mV (input impedance 5.0 kohms) Required microphone impedance: 600 ohms Line: 70 mV (input impedance 100 kohms)
OUTPUT	Line: 0.775 V at 0 VU Required load impedance: more than 20 kohms Phone: 100 mV/8 ohms at 0 VU
DIN	Input: 2 mV (input impedance 10 kohms) Output: 0.3 V Required load impedance: more than 20 kohms
DIMENSIONS	440 (W) × 483 (H) × 256 (D) mm (17.3 × 19.0 × 10.1″)
WEIGHT	21 kg (46.4 lbs)
POWER REQUIREMENTS	120 V 60 Hz for U.S.A. & Canada 220 V 50 Hz for Europe except U.K. 240 V 50 Hz for U.K. & Australia 110/120/220/240 V switchable 50/60 Hz for the other countries

*** For improvement purposes, specifications and design are subject to change without notice.**

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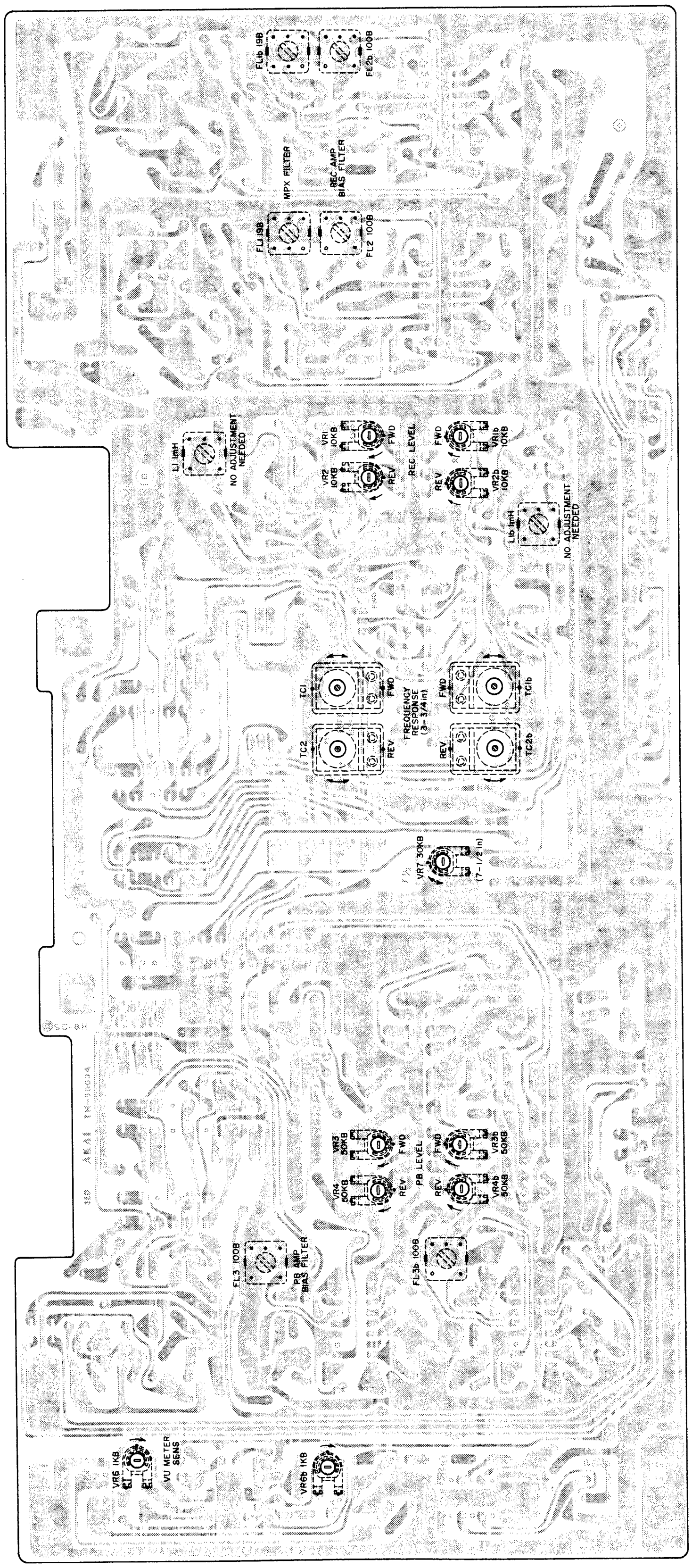
(Manufactured under license from Dolby Laboratories.)

II. AMPLIFIER ADJUSTMENT


FL1b 19B
FL2b 100B
MPX FILTER
REC AMP BIAS FILTER
FL1 19B
FL2 100B
L1 1mH
NO ADJUSTMENT NEEDED
VR1 10KB
VR2 10KB
FWD
REV
REC LEVEL
VR1b 10KB
VR2b 10KB
L1b 1mH
NO ADJUSTMENT NEEDED
TC1
TC2
FREQUENCY RESPONSE (3-3/4in)
TC1b
TC2b
VR7 30KB
(7-1/2in)
VR3 50KB
VR4 50KB
PB LEVEL
VR3b 50KB
VR4b 50KB
FL3 100B
PB AMP BIAS FILTER
FL3b 100B
VR6 1KB
VU METER SENS
VR6b 1KB
AKAI TH-5003A

NOTE
1. THE LETTER "b" FOLLOWING AN ADJUSTMENT PART NUMBER INDICATES "RIGHT CHANNEL".
2. FL1 to FL3 ADJUST FROM THE OPPOSITE SIDE.

Fig. 1 Pre Amp P.C Board TH-5003A

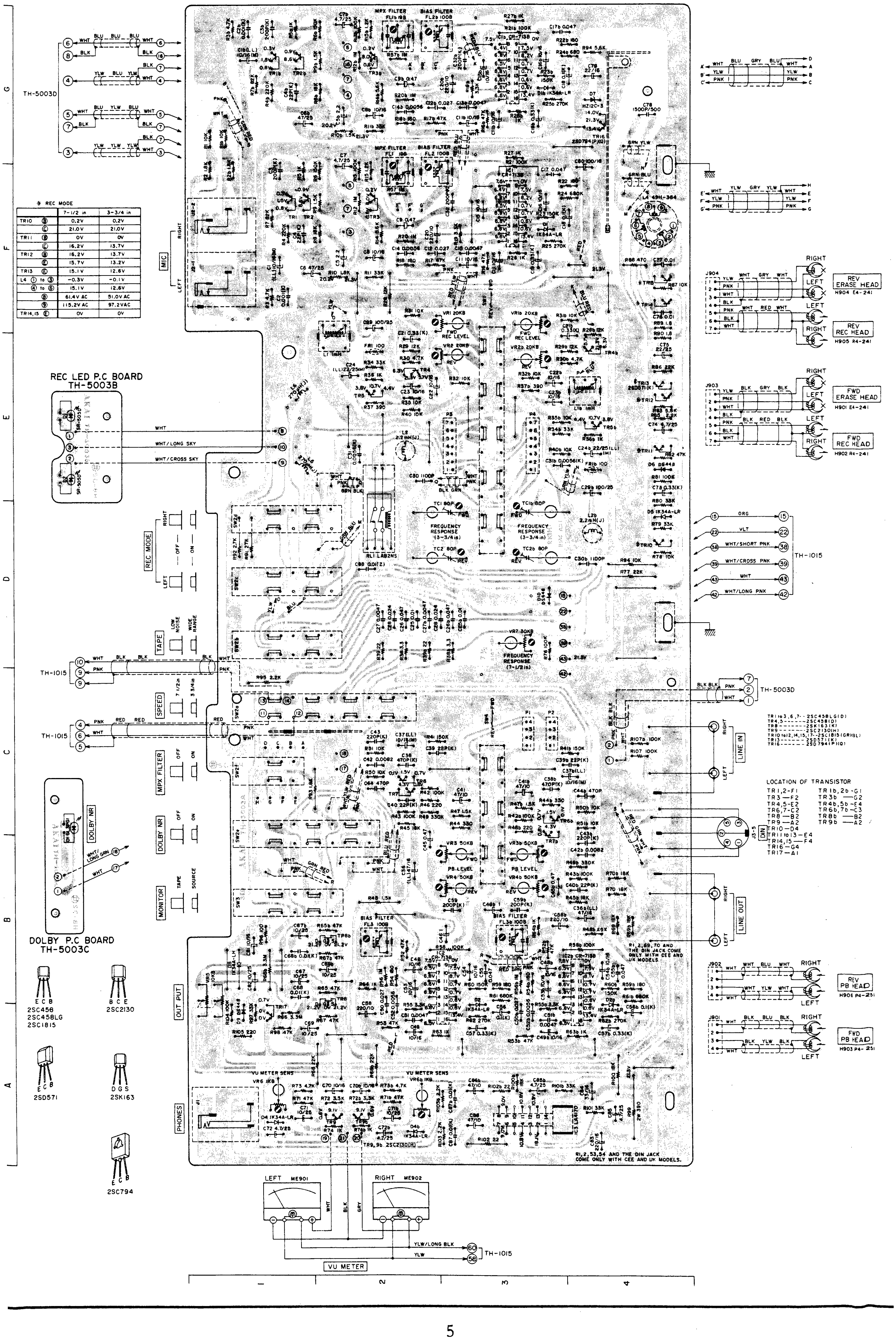
Step	Adjustment Item	Test Tape Supply Signal	Mode	Adjustment Point	Result	Remarks
1	FWD Playback Level	700 Hz 7-1/2 ips 0VU Test Tape	FWD	VR3 50 kB	−2.5 ±0.5 dBm (0.58V)	
2	REV Playback Level	700 Hz 7-1/2 ips 0VU Test Tape	REV	VR4 50 kB	−2.5 ±0.5 dBm (0.58V)	
3	VU Meter Sensitivity	700 Hz 7-1/2 ips 0VU Test Tape	FWD	VR6 1 kB	0 VU indication	
4	FWD Recording Level	Scotch ≠211 Tape 1,000 Hz −2.5 dBm Recording	FWD-REC	VR1 20 kB	−2.5 ±0.5 dBm (0.58V)	
5	REV Recording Level	Scotch≠211 Tape 1,000 Hz −2.5 dBm Recording	REV-REC	VR2 20 kB	−2.5 ±0.5 dBm (0.58V)	
6	FWD Frequency Response (3-3/4 ips)	Scotch ≠211 Tape 1.5 kHz, 15 kHz −22.5 dBm Recording	FWD-REC	TC1	1.5 kHz 15 kHz flat	Tape Speed 3-3/4 ips. Recheck Recording Level.
7	REV Frequency Response (3-3/4 ips)	Scotch ≠211 Tape 1.5 kHz, 15 kHz −22.5 dBm Recording	REV-REC	TC2	1.5 kHz 15 kHz flat	Tape Speed 3-3/4 ips. Recheck Recording level.
8	Frequency Response (7-1/2 ips)	Scotch ≠211 Tape 1.5 kHz, 15 kHz −22.5 dBm Recording	FWD-REC	VR7 30 kB	1.5 kHz 15 kHz	Tape Speed 7-1/2 ips. Recheck Recording Level.
9	FWD Distortion Confirmation	Scotch ≠211 Tape 1,000 Hz −2.5 dBm Recording	FWD-REC		Less than 0.5%	See NOTE 6.
10	REV Distortion Confirmation	Scotch ≠211 Tape 1,000 Hz −2.5 dBm Recording	REV-REC		Less than 0.5%	See NOTE 6.
11	PB Amp Bias Filter	100 kHz from an oscillator	REC	FL3 100B	Minimum output	Set Monitor Switch to "TAPE". See NOTE 7, 8.
12	Rec Amp Bias Filter	100 KHz from an oscillator	REC	FL2 100B	Minimum output	Set Monitor Switch to "SOURCE" See NOTE 7, 8.
13	MPX Filter	19 kHz from an oscillator	STOP	FL1 19B	Minimum output	Set MPX Filter Switch to ON. See NOTE 9.

NOTES:

1. Output Level Control should be at maximum.
2. Except for Step 6 and 7, set Tape Speed at 7-1/2 ips.
3. Set Tape Selector Switch to Low Noise position.
4. Set Dolby N.R. Switch to OFF position.
5. Except for Step 13, set MPX Filter Switch to OFF position.
6. If it does not comply with the specifications, repeat Steps 6 and 7, and readjust.
7. Unless the core is moved intentionally this adjustment is not necessary.
8. Adjust the oscillator's frequency to give a frequency counter reading of 100 kHz.
9. Adjust the oscillator's frequency to give a frequency counter reading of 19.00 kHz.
10. No adjustment is required for the adjustment core L1 (1 mH) of the recording equalizer. Do not touch it.

III. COMPOSITION OF VARIOUS P.C BOARDS

1. PRE AMP P.C BOARD TH-5003A (3ED), REC LED P.C BOARD TH-5003B AND DOLBY P.C BOARD TH-5003C



TH-5003D
MIC
RIGHT
LEFT
REC LED P.C BOARD
TH-5003B
WHT
WHT/LONG SKY
WHT/CROSS SKY
REC MODE
OFF
ON
TAPE
LOW NOISE
WIDE RANGE
SPEED
7-1/2 in
3-3/4 in
TH-1015
MPX FILTER
DOLBY NR
MONITOR
SOURCE
OUT PUT
PHONES
DOLBY P.C BOARD
TH-5003C
E C B
2SC458
2SC458LG
2SC1815
B C E
2SC2130
2SD571
D G S
2SK163
2SC794
REV ERASE HEAD
H904 E4-241
REV REC HEAD
H905 R4-241
FWD ERASE HEAD
H901 E4-241
FWD REC HEAD
H902 R4-241
LINE IN
LINE OUT
DIN
J3-5
REV PB HEAD
H906 P4-231
FWD PB HEAD
H903 P4-231
LEFT ME901
RIGHT ME902
VU METER
YLW/LONG BLK
YLW
MPX FILTER
BIAS FILTER
REC LEVEL
FREQUENCY RESPONSE (3-3/4 in)
FREQUENCY RESPONSE (7-1/2 in)
PB LEVEL
VU METER SENS
R1,2,69,70 AND THE DIN JACK COME ONLY WITH CEE AND UK MODELS
R1,2,53,54 AND THE DIN JACK COME ONLY WITH CEE AND UK MODELS.
A
B
C
D
E
F
G
1
2
3
4

※ REC MODE

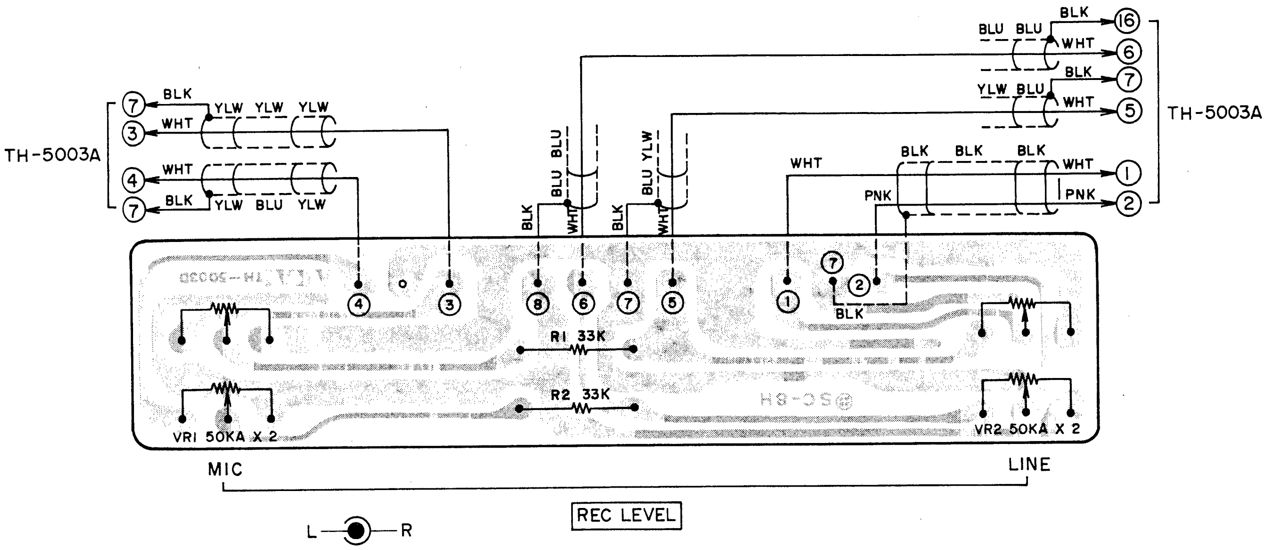
	7-1/2 in	3-3/4 in
TR10 Ⓑ	0.2V	0.2V
Ⓒ	21.0V	21.0V
TR11 Ⓑ	0V	0V
Ⓒ	16.2V	13.7V
TR12 Ⓑ	16.2V	13.7V
Ⓔ	15.7V	13.2V
TR13 Ⓔ	15.1V	12.6V
L4 ① to ③	-0.3V	-0.1V
④ to ⑥	15.1V	12.6V
⑧	61.4V AC	51.0V AC
⑨	115.2V AC	97.2VAC
TR14,15 Ⓔ	0V	0V

TR1 to 3,6,7 -- 2SC458LG(D)
TR4,5 ------- 2SC458(D)
TR8 -------- 2SK163(K)
TR9 -------- 2SC2130(H)
TR10 to 12,14,15,17 -- 2SC1815(GR)(BL)
TR13 ------- 2SD571(K)
TR16 ------- 2SD794(P)(Q)

LOCATION OF TRANSISTOR

TR1,2-F1	TR1b,2b-G1
TR3 —F2	TR3b —G2
TR4,5-E2	TR4b,5b-E4
TR6,7-C2	TR6b,7b-C3
TR8 —B2	TR8b —B2
TR9 —A2	TR9b —A2
TR10—D4	
TR11 to 13—E4	
TR14,15 —F4	
TR16—G4	
TR17—A1	

2. VOLUME P.C BOARD TH-5003D



IV. PARTS LIST

*The composite parts of Model GX-636DB except for those which have been changed as per the list below, are identical to those of Model GX-635D, GX-636.
Therefore, when ordering parts of this tape deck, please utilize Model GX-635D, GX-636 Parts List.

1. PRE AMP P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
1-1	BAT1008C070C	PRE AMP PC BLK GX-636DB(U)
1-2	BAT1008C070D	PRE AMP PC BLK GX-636DB(E)

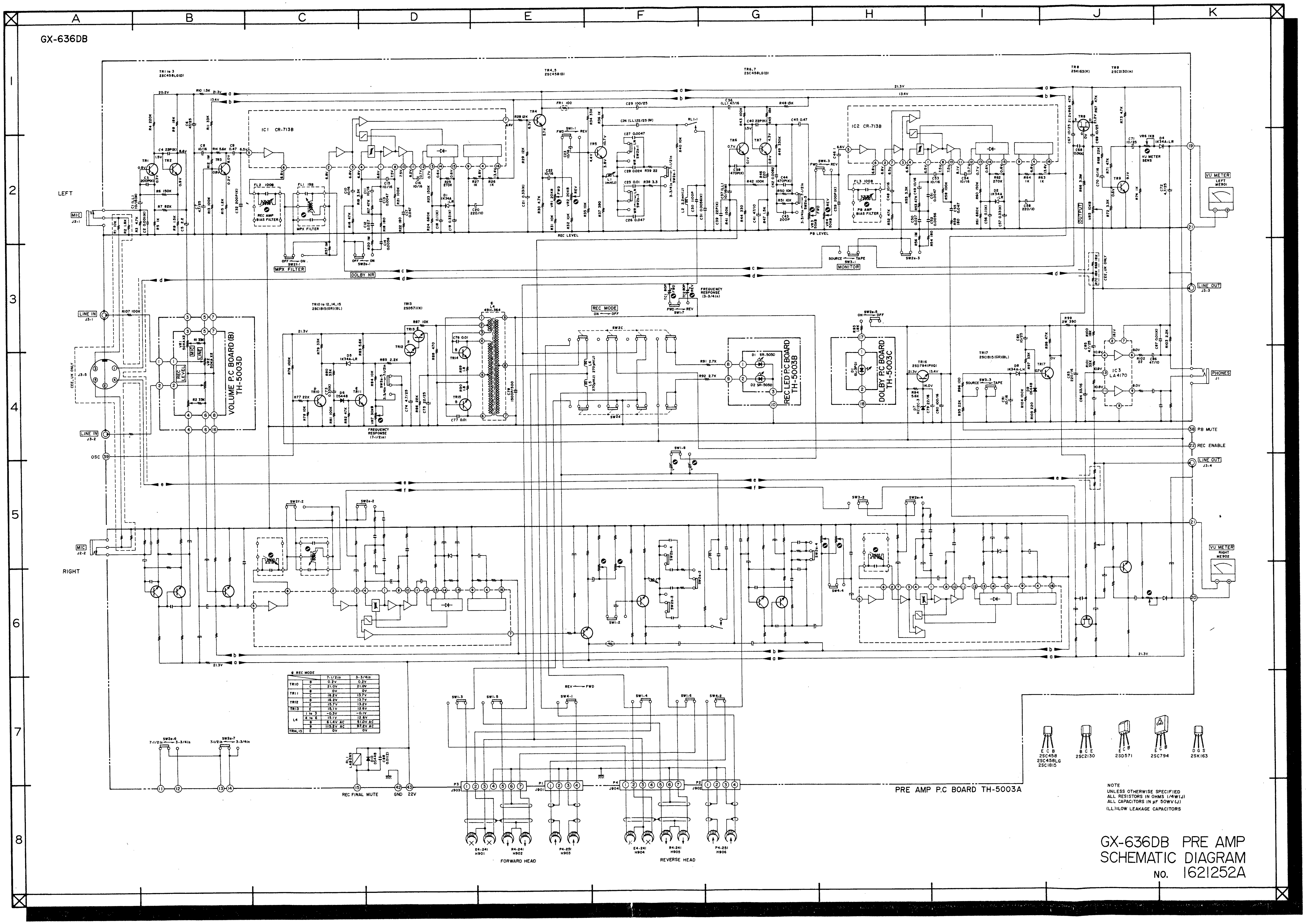
2. AMP PANEL BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1	BDB601309	AMP PANEL (DB) PART
2-2	BDB601310	AMP PANEL (DB-BL) PART

3. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
3-1	SP305098E	BACK BOARD GX-636DB(U)
3-2	SP305098M	BACK BOARD GX-636DB(U)-BL
3-3	SP305098G	BACK BOARD GX-636DB(C,A)
3-4	SP305098P	BACK BOARD GX-636DB(C,A)-BL
3-5	SP305098F	BACK BOARD GX-636DB(E,B,S)
3-6	SP305098N	BACK BOARD GX-636DB(E,B,S)-BL

V. SCHEMATIC DIAGRAM


A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
GX-636DB
LEFT
RIGHT
MIC J2-1
MIC J2-2
LINE IN J3-1
LINE IN J3-2
OSC
IC1 CR-7138
IC2 CR-7138
IC3 LA4170
FL1 19B
FL2 100B
FL3 100B
MPX FILTER
REC AMP BIAS FILTER
PB AMP BIAS FILTER
REC LEVEL
PB LEVEL
DOLBY NR
SOURCE
TAPE
MONITOR
REC MODE
FREQUENCY RESPONSE
VOLUME P.C BOARD (B) TH-5003D
REC LED P.C BOARD TH-5003B
DOLBY P.C BOARD TH-5003C
VU METER LEFT ME901
VU METER RIGHT ME902
LINE OUT J3-3
LINE OUT J3-4
PHONES J1
PB MUTE
REC ENABLE
21.3V
13.4V
REC FINAL MUTE
GND
22V
FORWARD HEAD
REVERSE HEAD
PRE AMP P.C BOARD TH-5003A
RL1 LAB2NS
D10 DS448
C88 0.01(Z)
E C B
2SC458
2SC458LG
2SC1815
B C E
2SC2130
E C B
2SD571
E C B
2SC794
D G S
2SK163

✱ REC MODE

		7-1/2in	3-3/4in
TR10	B	0.2V	0.2V
	C	21.0V	21.0V
TR11	B	0V	0V
	C	16.2V	13.7V
TR12	B	16.2V	13.7V
	E	15.7V	13.2V
TR13	E	15.1V	12.6V
L4	1 to 3	-0.3V	-0.1V
	4 to 6	15.1V	12.6V
	8	61.4V AC	51.0V AC
	9	115.2V AC	97.2V AC
TR14, 15	E	0V	0V

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)
(LL)=LOW LEAKAGE CAPACITORS

GX-636DB PRE AMP
SCHEMATIC DIAGRAM
NO. 1621252A

AKAI ELECTRIC CO., LTD. 12-14, 2-Chome, Higashi-Kojiya, Ohta-Ku, Tokyo, Japan
TEL: Tokyo (742) 5111 CABLE: HIFIAKAI TOKYO TELEX: J26261
Printed No. 1621250-2010G1
Printed Date July 10, 1981
Printed in Japan

SERVICE MANUAL

PARTS LIST

MODEL GX-635D

AKAI

AKAI
AKAI
AKAI

STEREO TAPE DECK

MODEL GX-635D

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SECTION 1

SERVICE MANUAL

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For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. TECHNICAL DATA

TRACK SYSTEM	4 track 2 channel stereo/monaural system
REEL CAPACITY	Up to 10-1/2" reel
TAPE SPEED	19 cm/s ±0.8% (7-1/2 ips) 9.5 cm/s ±1.0% (3-3/4 ips) (Pitch control: more than ±6%)
WOW & FLUTTER	Less than 0.03% WRMS at 19 cm/s Less than 0.04% WRMS at 9.5 cm/s Less than 0.08% DIN 45500 at 19 cm/s Less than 0.10% DIN 45500 at 9.5 cm/s
FREQUENCY RESPONSE	30 to 27,000 Hz ±3 dB at 19 cm/s using WR Tape 30 to 21,000 Hz ±3 dB at 9.5 cm/s using WR Tape 30 to 25,000 Hz ±3 dB at 19 cm/s using LN Tape 30 to 19,000 Hz ±3 dB at 9.5 cm/s using LN Tape
DISTORTION (1,000 Hz "0" VU)	Less than 0.5% at 19 cm/s
SIGNAL TO NOISE RATIO	Better than 62 dB DIN 45500
ERASE RATIO	Better than 70 dB (at 1,000 Hz)
CROSS TALK	Better than 40 dB (at 1,000 Hz)
CHANNEL SEPARATION	Better than 55 dB (at 1,000 Hz)
BIAS FREQUENCY	100 kHz
HEADS	(6): Two GX Recording Heads, Two GX Playback Heads, Two Erase Heads
MOTORS	(3): One AC Servo Motor for Capstan Drive Two AC Eddy Current Motors for Reel Drive
REAL TIME COUNTER	Up to 99 min 59 sec, Less than ±1.5%
FF & RWD TIME	120 sec using 550m (1,800 ft.) Tape
OUTPUT JACKS	Line (2): 0.775V (0 VU) Required load impedance: more than 20 kohms Phone (1): 100 mV/8 ohms
INPUT JACKS	Microphone (2): 0.25 mV Required microphone impedance: 600 ohms LINE (2): 70 mV impedance 100 kohms
DIN JACK	Input 2.0 mV, impedance 10 kohms, Output 0.3V
DIMENSIONS	440(W) x 483(H) x 256(D) mm, (17.4 x 19.0 x 10.1")
WEIGHT	21 kg (46.4 lbs)
POWER REQUIREMENT	100V, 50/60 Hz for JPN 120V, 60 Hz for US & Canada 220/240V, 50 Hz for Europe, UK and Australia 110/120/220/240V, 50/60 Hz internally switchable for other countries

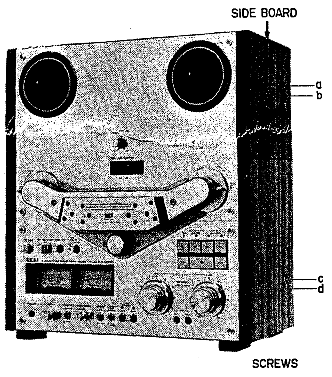
*** Specifications determined with Akai LN-150-7 or SCOTCH #211 tape unless otherwise noted.**

*** For improvement purposes, specifications and design are subject to change without notice.**

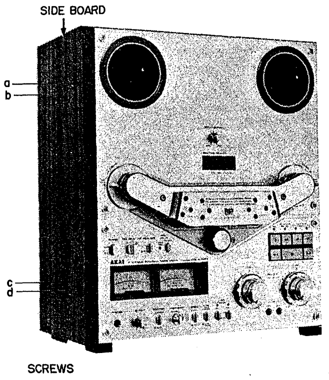
II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

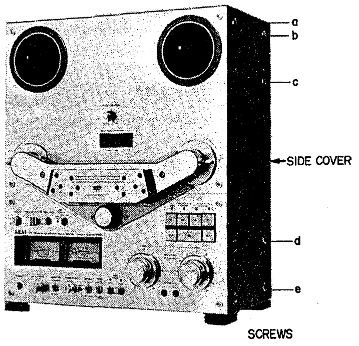
1


SIDE BOARD
a
b
c
d
SCREWS

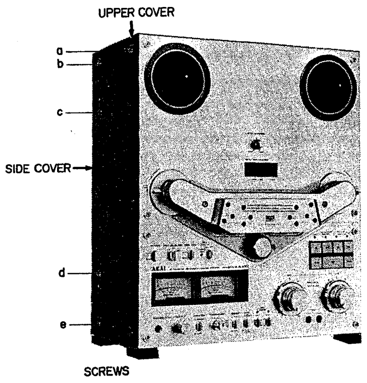
2


SIDE BOARD
a
b
c
d
SCREWS

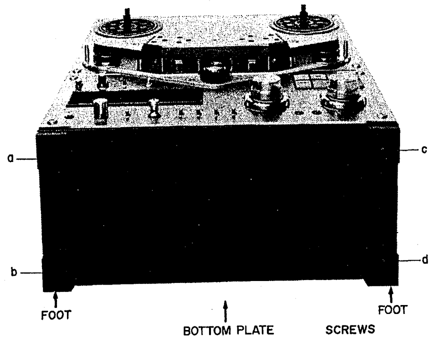
3


a
b
c
SIDE COVER
d
e
SCREWS

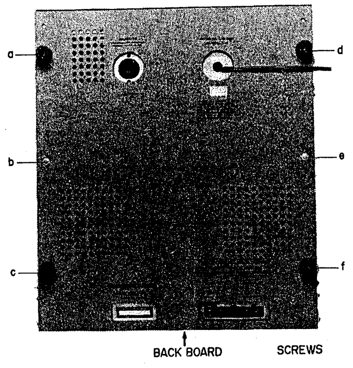
4


UPPER COVER
a
b
c
SIDE COVER
d
e
SCREWS

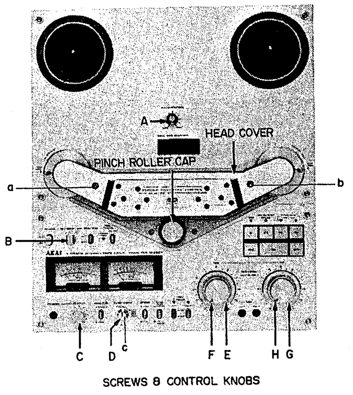
5


a
b
c
d
FOOT
BOTTOM PLATE
FOOT
SCREWS

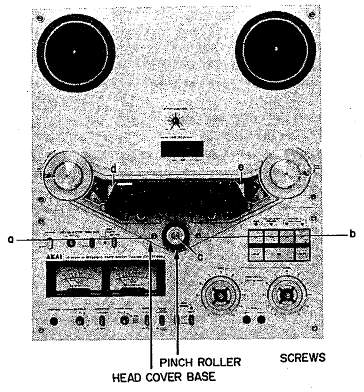
6


a
b
c
d
e
f
BACK BOARD
SCREWS

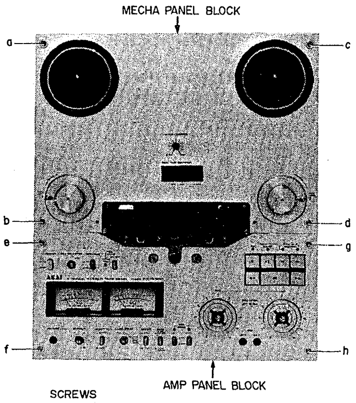
7


A
HEAD COVER
PINCH ROLLER CAP
a
b
B
C
D
c
F
E
H
G
SCREWS & CONTROL KNOBS

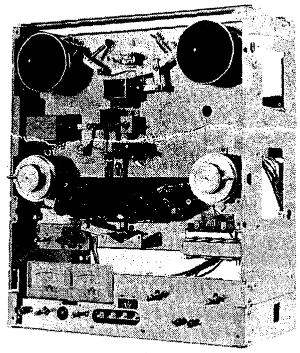
8


d
e
a
b
c
PINCH ROLLER
HEAD COVER BASE
SCREWS

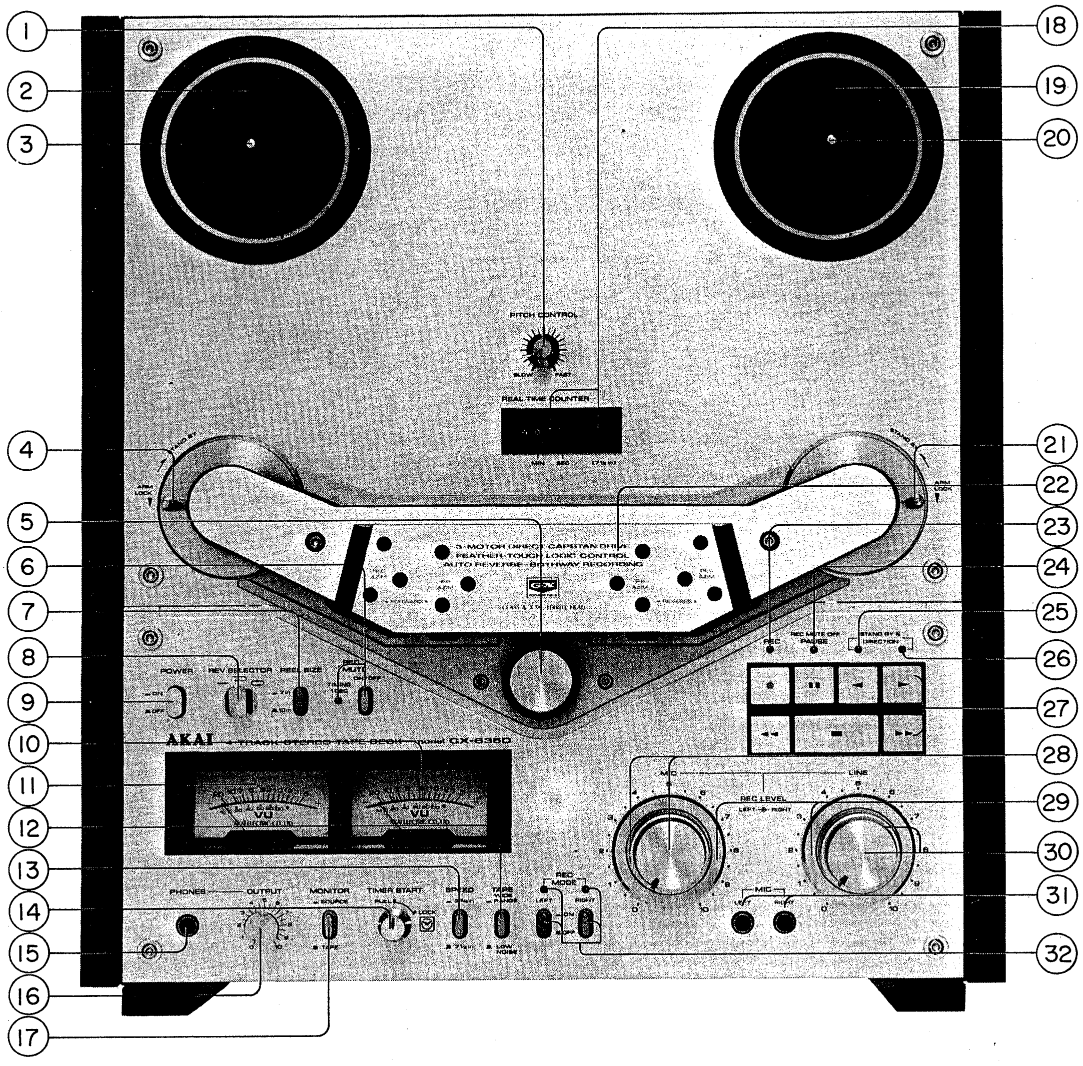
9


MECHA PANEL BLOCK
a
c
b
d
e
g
f
h
SCREWS
AMP PANEL BLOCK

10



III. CONTROLS


1
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13
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15
16
17
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20
21
22
23
24
25
26
27
28
29
30
31
32
PITCH CONTROL
SLOW
FAST
REAL TIME COUNTER
MIN
SEC
STAND BY
ARM LOCK
POWER
ON
OFF
REV SELECTOR
REEL SIZE
REC MUTE
TIMING
AKAI
4-TRACK STEREO TAPE DECK
model GX-635D
VU
REC
REC MUTE OFF PAUSE
STAND BY & DIRECTION
MIC
LINE
REC LEVEL
LEFT
RIGHT
PHONES
OUTPUT
MONITOR
SOURCE
TAPE
TIMER START
PULL
LOCK
SPEED
TAPE
LOW NOISE
REC MODE
ON
OFF

Fig. 1 Controls

1. PITCH CONTROL
2. SUPPLY REEL TABLE
3. BUILT-IN REEL RETAINER (Left)
4. LEFT TENSION ARM
5. PINCH ROLLER
6. RECORDING MUTE SWITCH (REC MUTE)/TIMING LAMP
7. REEL SIZE SELECTOR
8. REVERSE SELECTOR
9. POWER SWITCH
10. VU METER (Right)
11. VU METER (Left)
12. TAPE SELECTOR
13. TAPE SPEED SELECTOR
14. TIMER START
15. HEADPHONE JACK
16. OUTPUT LEVEL CONTROL
17. MONITOR SWITCH
18. REAL TIME COUNTER and RESET BUTTON
19. TAKE-UP REEL TABLE
20. BUILT-IN REEL RETAINER (Right)
21. RIGHT TENSION ARM
22. HEAD COVER
23. RECORDING INDICATOR LAMP
24. PAUSE INDICATOR LAMP
25. REVERSE DIRECTION/STAND BY INDICATOR LAMP
26. FORWARD DIRECTION/STAND BY INDICATOR LAMP
27. MODE BUTTONS
28. MICROPHONE INPUT CONTROLS
29. MEMORY MARKERS
30. LINE INPUT CONTROLS
31. MICROPHONE JACKS (Left/Right)
32. RECORDING MODE SWITCH

IV. PRINCIPAL PARTS LOCATION

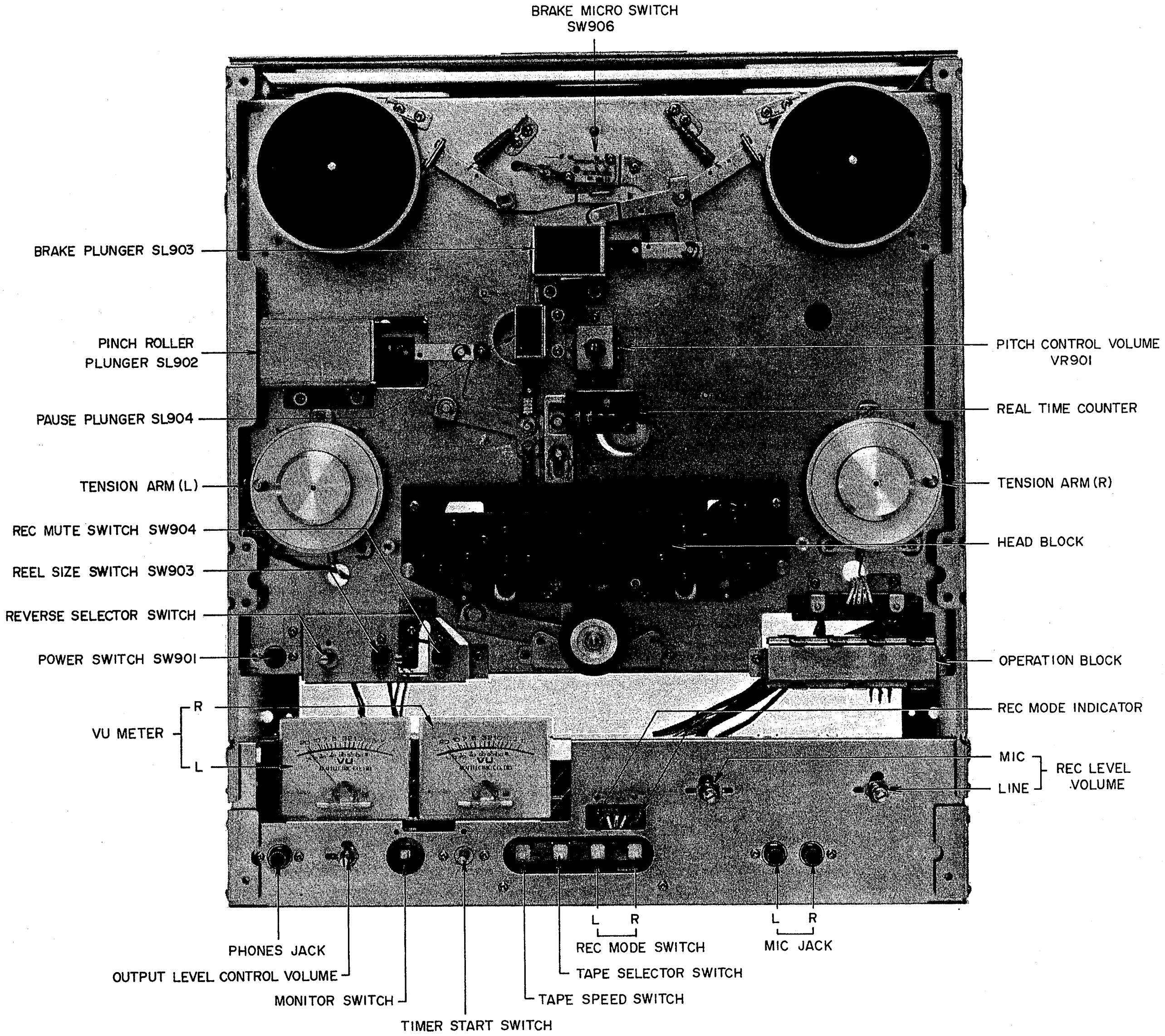

BRAKE MICRO SWITCH SW906
BRAKE PLUNGER SL903
PINCH ROLLER PLUNGER SL902
PAUSE PLUNGER SL904
TENSION ARM (L)
REC MUTE SWITCH SW904
REEL SIZE SWITCH SW903
REVERSE SELECTOR SWITCH
POWER SWITCH SW901
VU METER
R
L
PITCH CONTROL VOLUME VR901
REAL TIME COUNTER
TENSION ARM (R)
HEAD BLOCK
OPERATION BLOCK
REC MODE INDICATOR
MIC
LINE
REC LEVEL VOLUME
PHONES JACK
OUTPUT LEVEL CONTROL VOLUME
MONITOR SWITCH
TIMER START SWITCH
TAPE SPEED SWITCH
TAPE SELECTOR SWITCH
L
R
REC MODE SWITCH
L
R
MIC JACK

Fig. 2 Front View

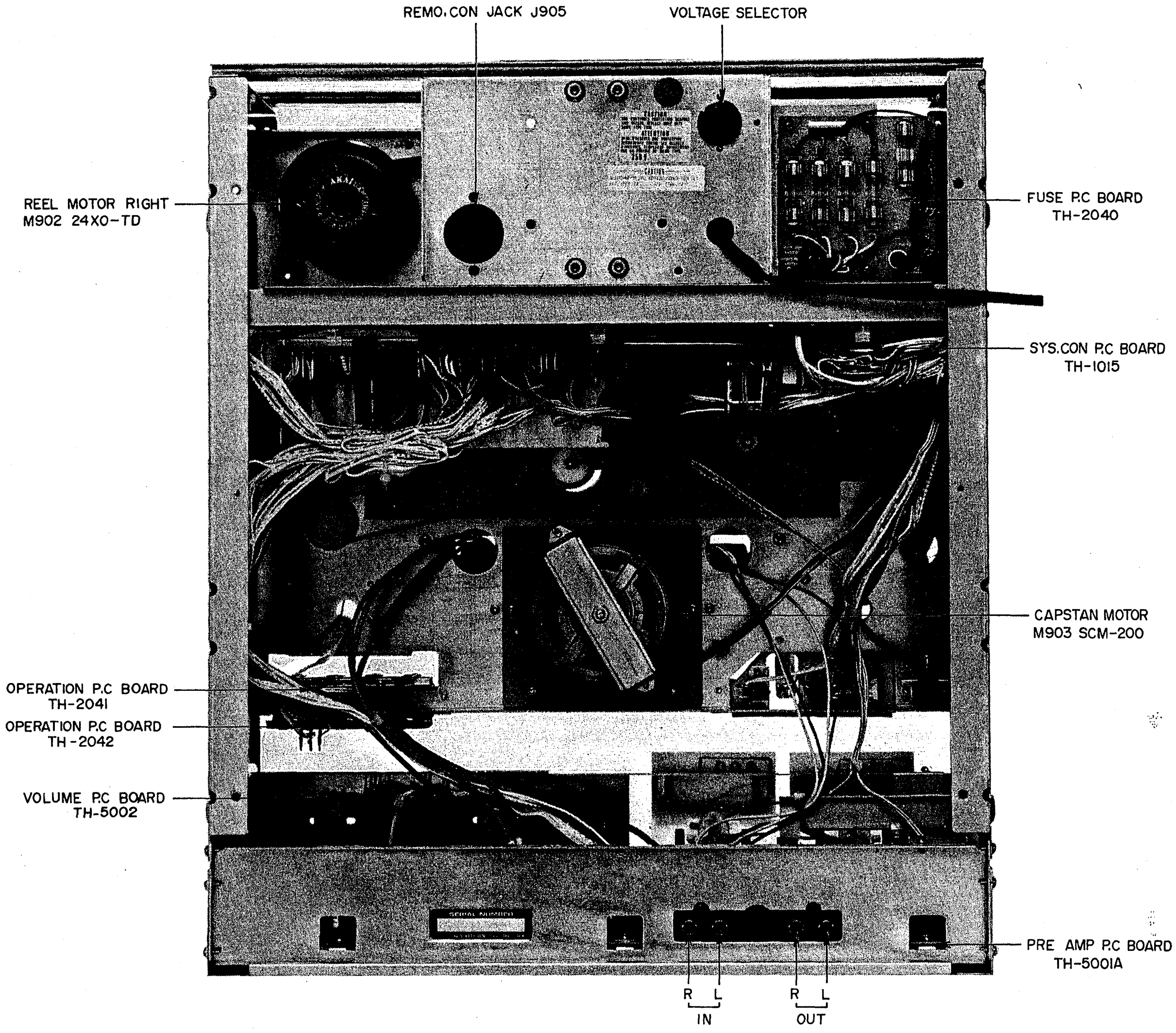
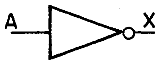
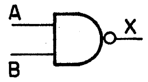
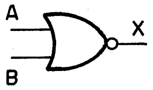

REMO.CON JACK J905
VOLTAGE SELECTOR
REEL MOTOR RIGHT
M902 24XO-TD
FUSE P.C BOARD
TH-2040
SYS.CON P.C BOARD
TH-1015
CAPSTAN MOTOR
M903 SCM-200
OPERATION P.C BOARD
TH-2041
OPERATION P.C BOARD
TH-2042
VOLUME P.C BOARD
TH-5002
PRE AMP P.C BOARD
TH-5001A
R L
IN
R L
OUT

Fig. 3 Rear View

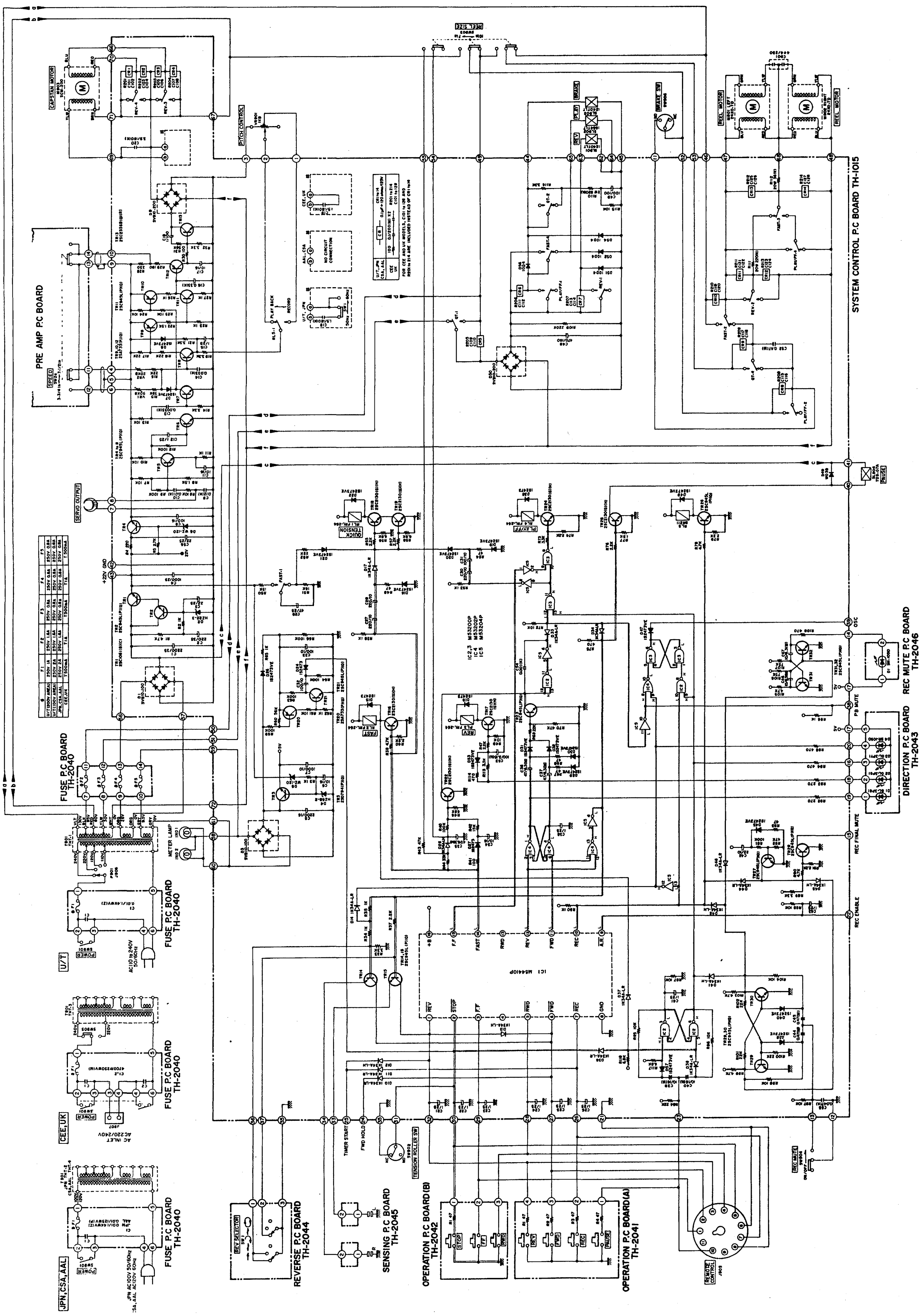
V. CIRCUIT OPERATING PRINCIPLES

1. SYSTEM CONTROL OPERATION

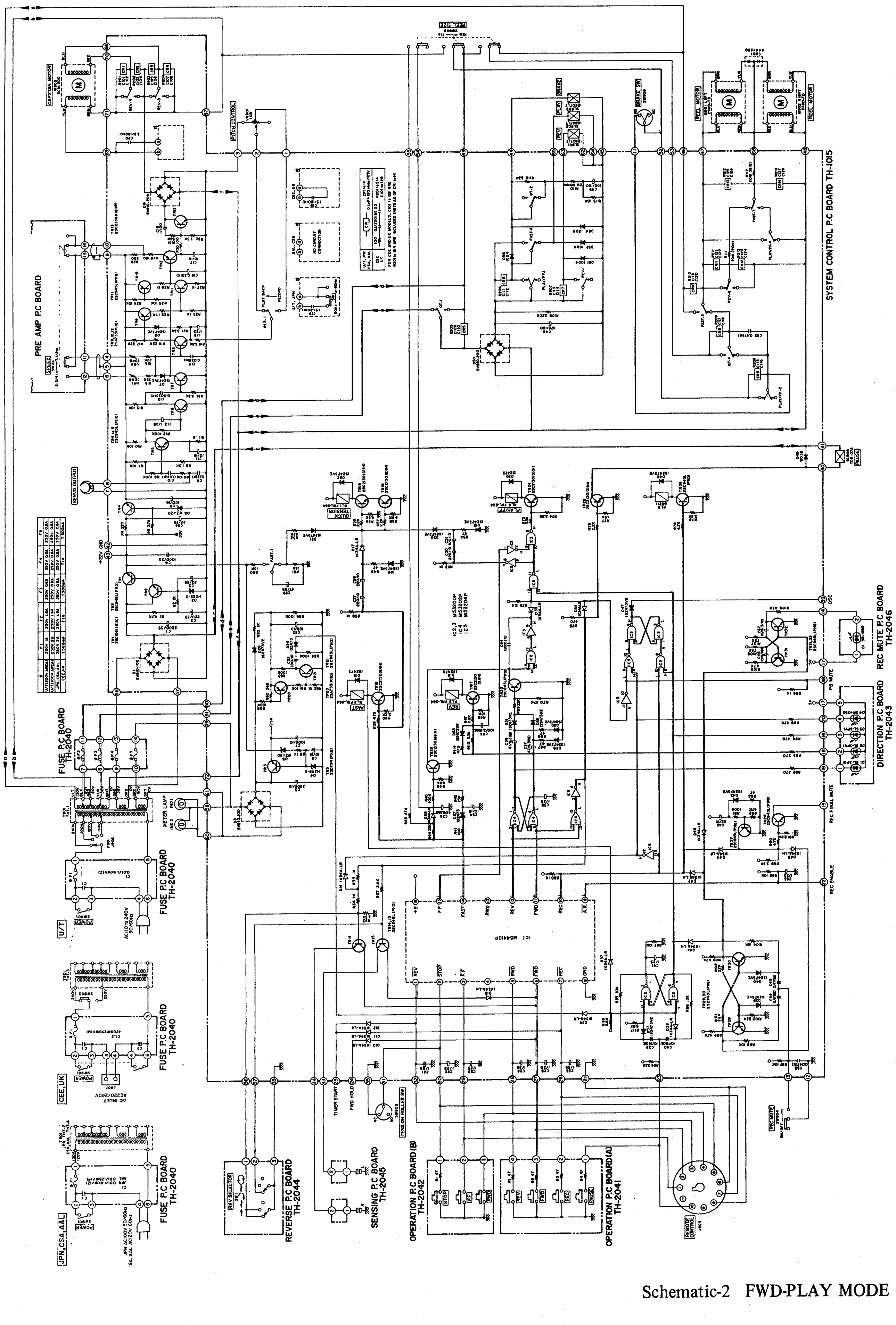
	SYMBOL	TRUTH TABLE
NOT CIRCUIT	 $X = \overline{A}$	A X 0 1 1 0
NAND CIRCUIT	 $X = \overline{A \cdot B}$	A B X 0 0 1 1 0 1 0 1 1 1 1 0
NOR CIRCUIT	 $X = \overline{A + B}$	A B X 0 0 1 1 0 0 0 1 0 1 1 0

0= LOW LEVEL
1 = HIGH LEVEL

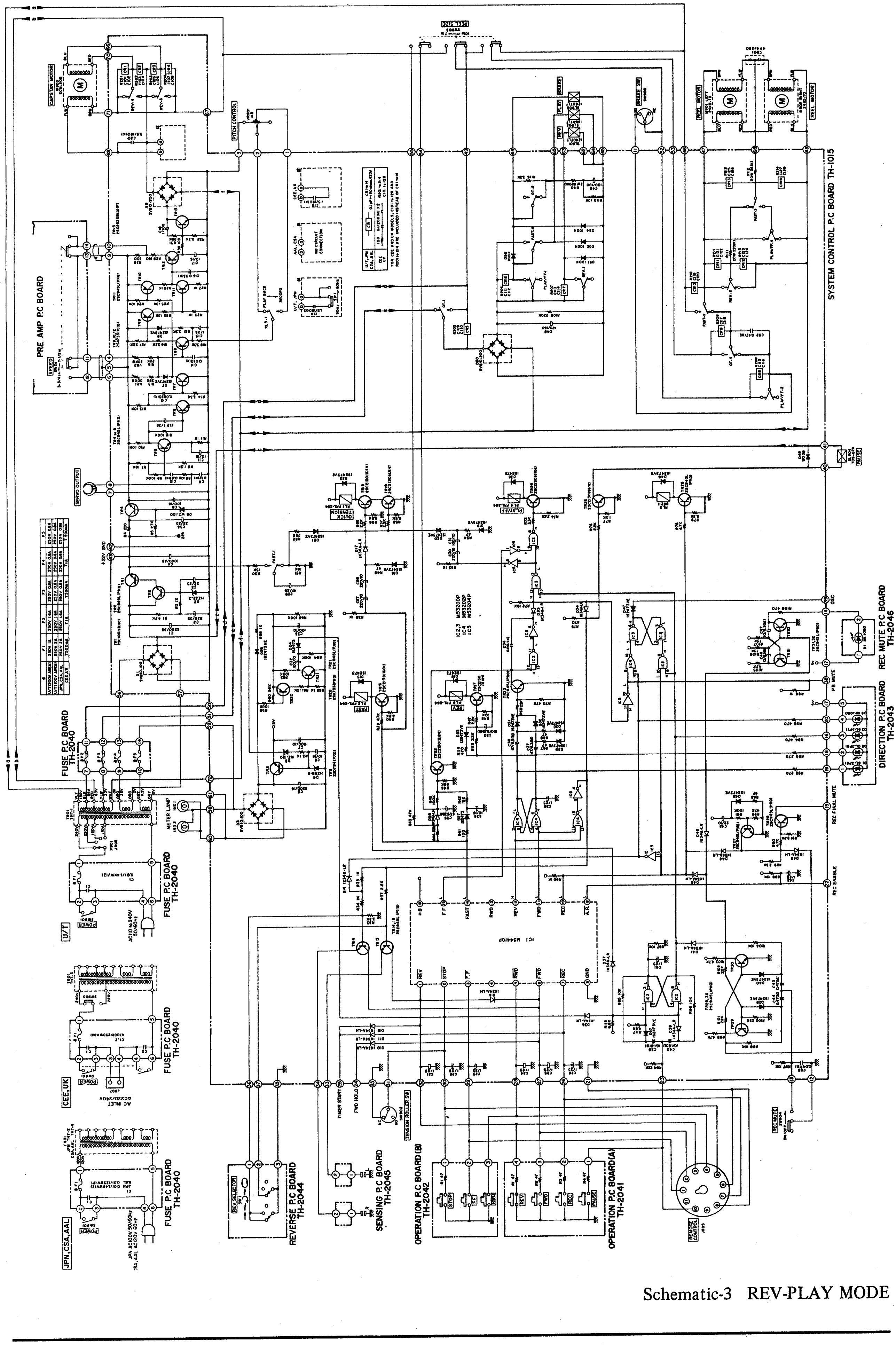
Chart-1


PRE AMP P.C BOARD
SYSTEM CONTROL P.C BOARD TH-1015
FUSE P.C BOARD TH-2040
REC MUTE P.C BOARD TH-2046
DIRECTION P.C BOARD TH-2043
REVERSE P.C BOARD TH-2044
SENSING P.C BOARD TH-2045
OPERATION P.C BOARD(B) TH-2042
OPERATION P.C BOARD(A) TH-2041
U/T
CEE,UK
JPN,CSA,AAL
CAPSTAN MOTOR
REEL MOTOR
PITCH CONTROL
SPEED
SERVO OUTPUT
BRAKE
BRAKE SW
REEL SIZE
QUICK TENSION
PLAY/FF
FAST
REV
IC1 M54410P
PAUSE
REMOTE CONTROL
REC MUTE
TENSION ROLLER SW
REV SELECTOR
POWER
METER LAMP
+22V GND
OSC
PB MUTE
REC FINAL MUTE
REC ENABLE
TIMER START
FWD HOLD
STOP
FWD
REC
F.F

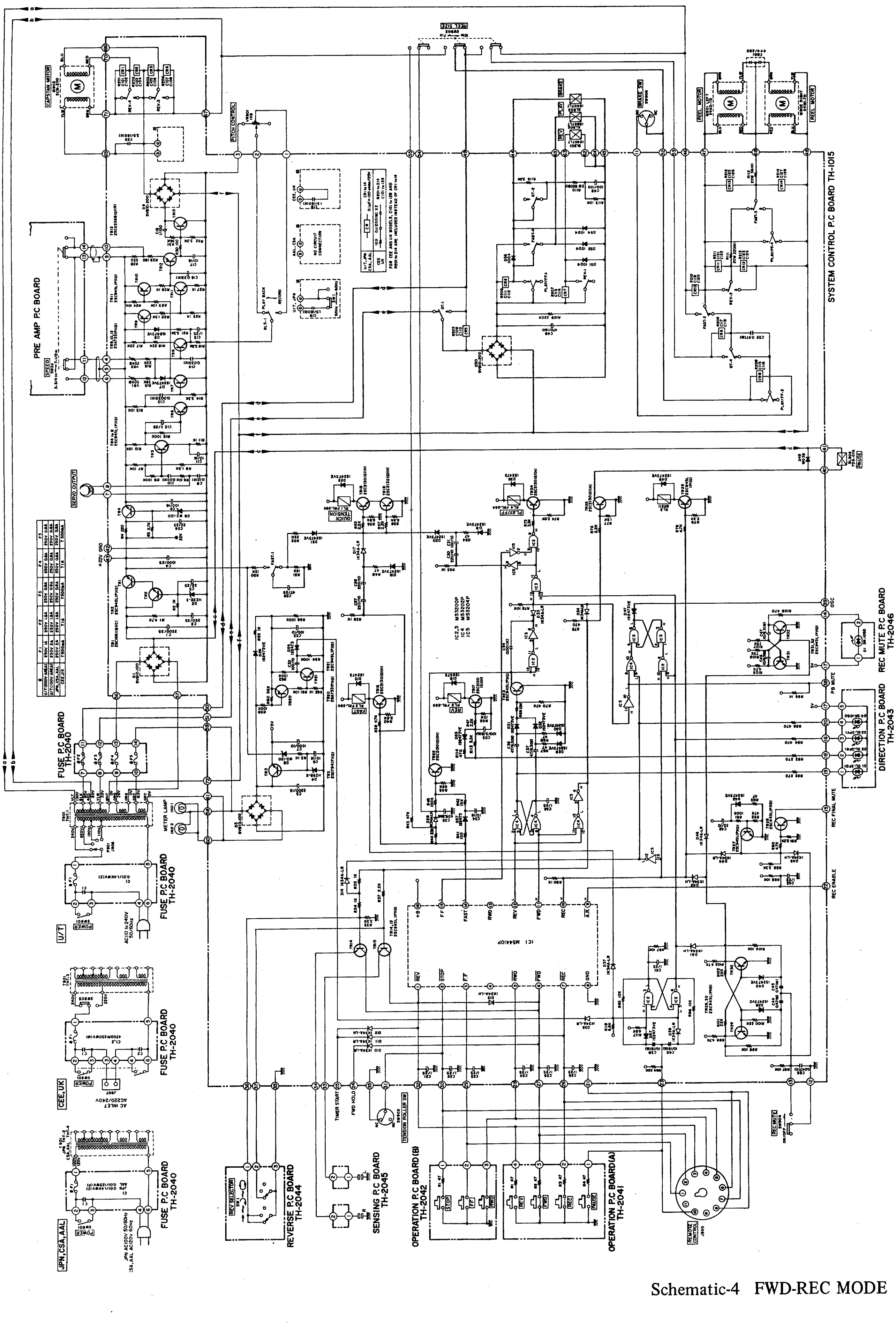
Schematic-1 STOP MODE



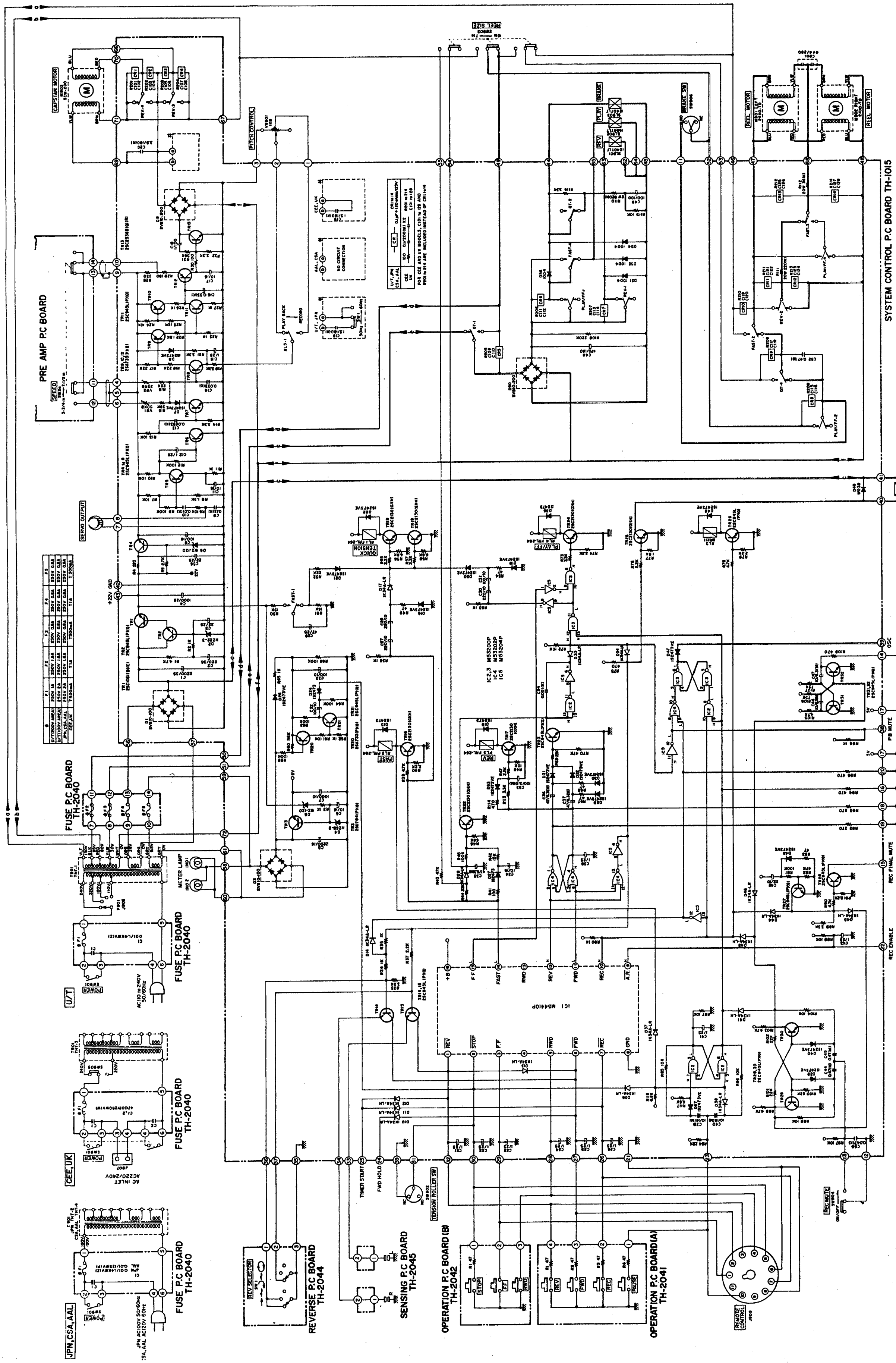
Schematic-2 FWD-PLAY MODE


CAPSTAN MOTOR
PITCH CONTROL
PRE AMP P.C BOARD
SPEED
SERVO OUTPUT
FUSE P.C BOARD TH-2040
METER LAMP
U/T
POWER
CEE,UK
JPN,CSA,AAL
REV SELECTOR
REVERSE P.C BOARD TH-2044
SENSING P.C BOARD TH-2045
TENSION ROLLER SW
TIMER START
FWD HOLD
OPERATION P.C BOARD(B) TH-2042
OPERATION P.C BOARD(A) TH-2041
REMOTE CONTROL
REC MUTE
IC1 M54410P
REEL SIZE
BRAKE
BRAKE SW
REEL MOTOR
SYSTEM CONTROL P.C BOARD TH-1015
PAUSE
REC MUTE P.C BOARD TH-2046
DIRECTION P.C BOARD TH-2043
QUICK TENSION
FAST
REV
PLAY/FF
REC FINAL MUTE
REC ENABLE
PB MUTE
OSC
IC2,3 M53200P
IC4 M53202P
IC5 M53204P

Schematic-3 REV-PLAY MODE

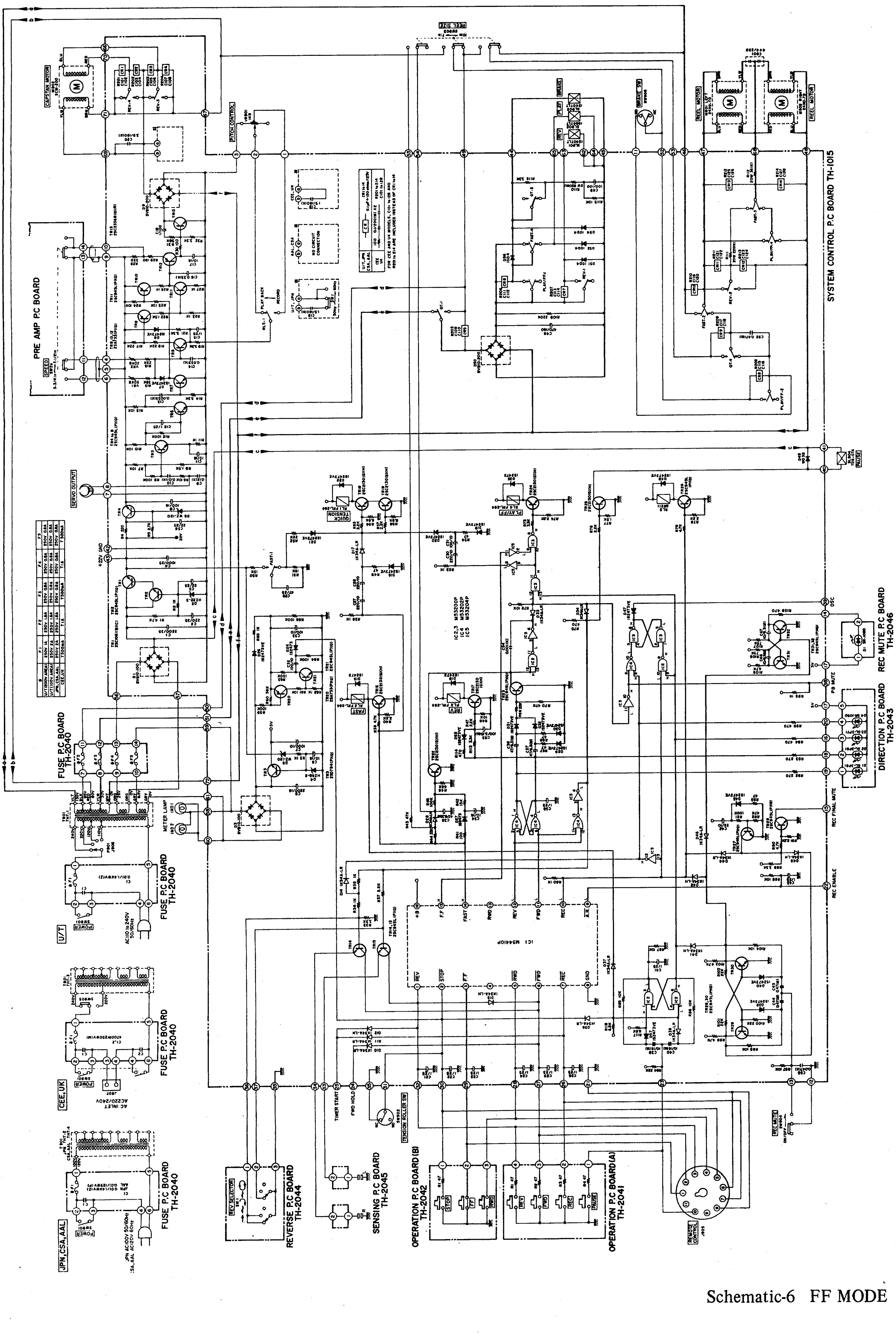

CAPSTAN MOTOR
PITCH CONTROL
REEL SIZE
BRAKE
BRAKE SW
REEL MOTOR
SYSTEM CONTROL P.C BOARD TH-1015
PRE AMP P.C BOARD
SPEED
SERVO OUTPUT
+22V GND
FUSE P.C BOARD TH-2040
METER LAMP
POWER
U/T
CEE,UK
JPN,CSA,AAL
QUICK TENSION
PLAY/FF
FAST
REV
IC1 M54410P
IC2,3 M53200P
IC4 M53202P
IC5 M53204P
REC MUTE P.C BOARD TH-2046
DIRECTION P.C BOARD TH-2043
REC FINAL MUTE
REC ENABLE
OSC
PB MUTE
REC MUTE
REMOTE CONTROL
REV SELECTOR
REVERSE P.C BOARD TH-2044
SENSING P.C BOARD TH-2045
TENSION ROLLER SW
TIMER START
FWD HOLD
OPERATION P.C BOARD(B) TH-2042
OPERATION P.C BOARD(A) TH-2041
STOP
FF
RWD
REC
FWD
PAUSE

Schematic-4 FWD-REC MODE

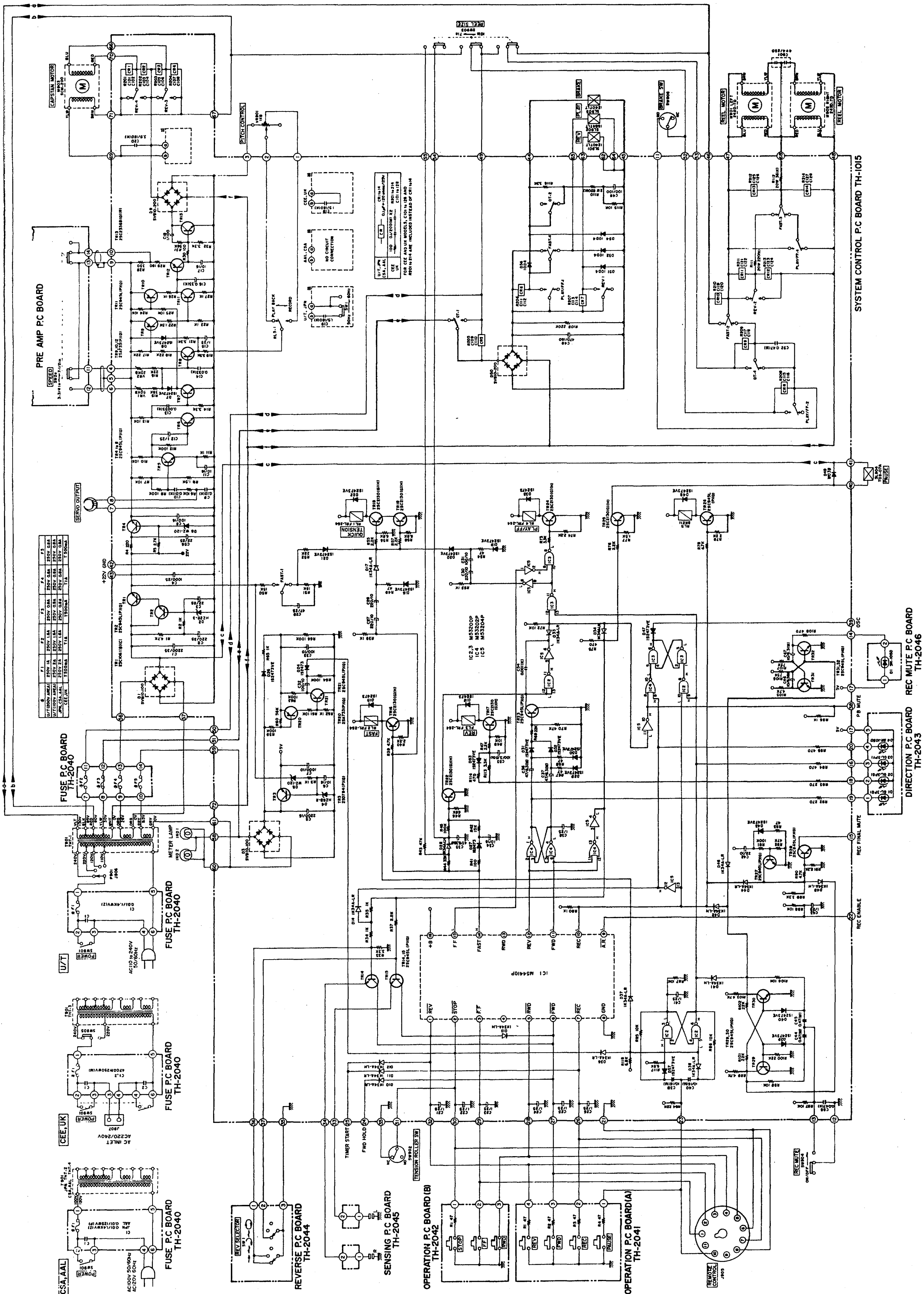


PRE AMP P.C BOARD
SYSTEM CONTROL P.C BOARD TH-1015
FUSE P.C BOARD TH-2040
REC MUTE P.C BOARD TH-2046
DIRECTION P.C BOARD TH-2043
REVERSE P.C BOARD TH-2044
SENSING P.C BOARD TH-2045
OPERATION P.C BOARD(B) TH-2042
OPERATION P.C BOARD(A) TH-2041
CAPSTAN MOTOR
REEL MOTOR
PITCH CONTROL
SERVO OUTPUT
SPEED
REEL SIZE
BRAKE SW
METER LAMP
IC1 M54410P
TIMER START
FWD HOLD
TENSION ROLLER SW
REV SELECTOR
REMOTE CONTROL
REC MUTE
POWER
U/T
CEE,UK
JPN,CSA,AAL

Schematic-5 REV-REC MODE


PRE AMP P.C BOARD
SYSTEM CONTROL P.C BOARD TH-1015
FUSE P.C BOARD TH-2040
REC MUTE P.C BOARD TH-2046
DIRECTION P.C BOARD TH-2043
OPERATION P.C BOARD(B) TH-2042
OPERATION P.C BOARD(A) TH-2041
SENSING P.C BOARD TH-2045
REVERSE P.C BOARD TH-2044
CAPSTAN MOTOR
REEL MOTOR
PITCH CONTROL
SERVO OUTPUT
METER LAMP
REEL SIZE
BRAKE SW
QUICK TENSION
PLAY/FF
FAST
REV
PAUSE
IC1 M54410P
IC2,3 M53200P
IC5 M53204P
TENSION ROLLER SW
REC MUTE
REV SELECTOR
REMOTE CONTROL
POWER
U/T
CEE,UK
JPN,CSA,AAL
STOP
FF
RWD
FWD
REC

Schematic-6 FF MODE

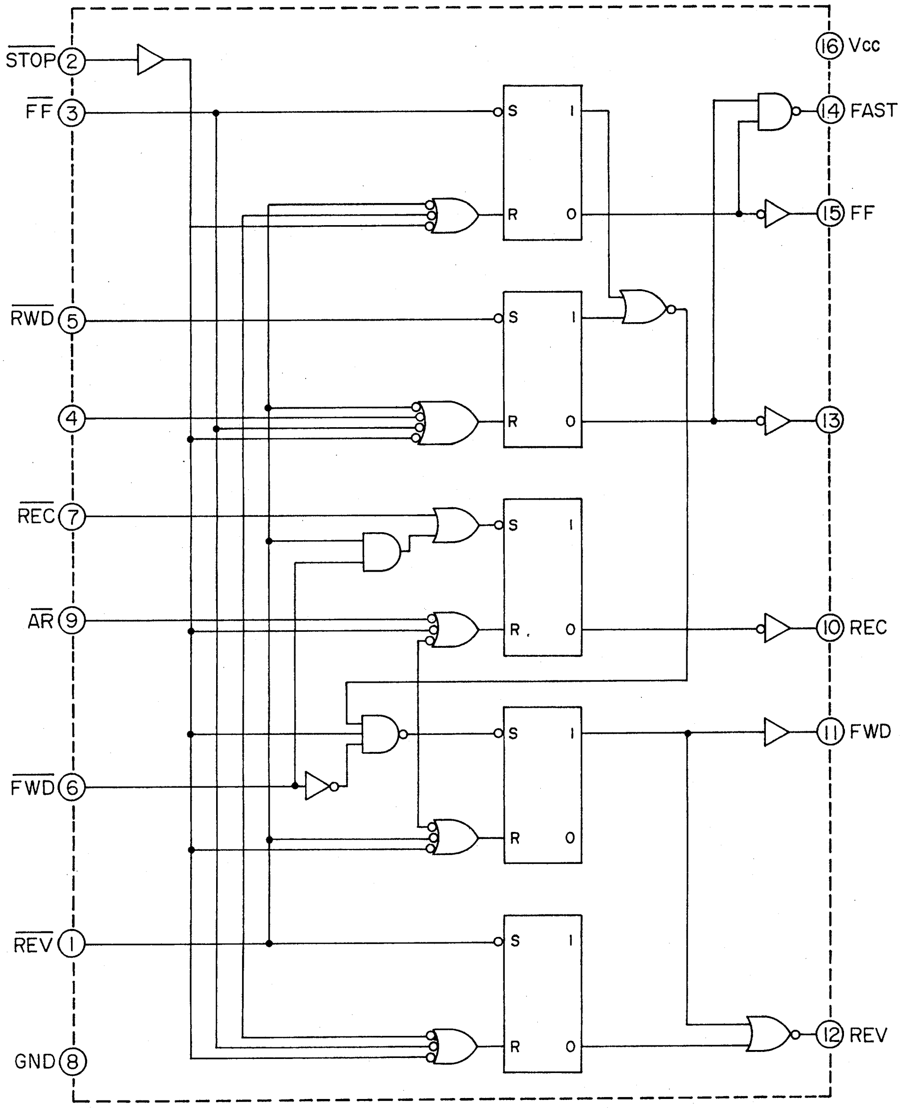

PRE AMP P.C BOARD
SYSTEM CONTROL P.C BOARD TH-1015
FUSE P.C BOARD TH-2040
REC MUTE P.C BOARD TH-2046
DIRECTION P.C BOARD TH-2043
REVERSE P.C BOARD TH-2044
SENSING P.C BOARD TH-2045
OPERATION P.C BOARD (B) TH-2042
OPERATION P.C BOARD (A) TH-2041
CAPSTAN MOTOR
REEL MOTOR
PITCH CONTROL
SERVO OUTPUT
SPEED
REEL SIZE
BRAKE SW
METER LAMP
IC1 M54410P
REMOTE CONTROL
TENSION ROLLER SW
REC MUTE
REV SELECTOR
U/T
CEE, UK
JPN, CSA, AAL
POWER

Schematic-7 RWD MODE

1-1. CIRCUIT CONSTRUCTION OF IC1 M54410P

The design of M54410P until now had $\overline{\text{STOP}}$, $\overline{\text{PLAY}}$, $\overline{\text{REC}}$, $\overline{\text{FF}}$, $\overline{\text{RWD}}$, $\overline{\text{PAUSE}}$ and REC preventing $\overline{\text{AR}}$ as its input terminals. GX-635D circuit is constructed with $\overline{\text{FWD}}$ in place of $\overline{\text{PAUSE}}$ and $\overline{\text{REV}}$ in place of $\overline{\text{PLAY}}$. Pause is controlled by a flip flop with a separate IC.

1) Block Diagram



STOP ②
FF ③
RWD ⑤
④
REC ⑦
AR ⑨
FWD ⑥
REV ①
GND ⑧
⑯ Vcc
⑭ FAST
⑮ FF
⑬
⑩ REC
⑪ FWD
⑫ REV
S
R
1
0

Fig. 4 M54410P

2) Terminals and their functions

	Terminal Name	Terminal Function
Operation input terminals	$\overline{\text{STOP}}$	Input terminal for stopping operation
	$\overline{\text{FF}}$	Input terminal for fast forward
	$\overline{\text{RWD}}$	Input terminal for rewind
	$\overline{\text{FWD}}$	Input terminal for playback in the forward direction
	$\overline{\text{REV}}$	Input terminal for playback in the reverse direction
	$\overline{\text{REC}}$	Input terminal for recording
Control input terminal $\overline{\text{AR}}$		Input terminal for preventing recording
Output terminals	FAST	Terminal with "H" signal output during fast forward or rewind mode
	FF	Terminal with "H" signal output during fast forward mode
	FWD	Terminal with "H" signal output during forward playback mode
	REV	Terminal with "H" signal output during reverse playback mode
	REC	Terminal with "H" signal output during recording or REC/Pause mode

Chart-2

3) Operation activated by each input

Input Signal	Output					Output Mode
	FAST	FF	FWD	REV	REC	
$\overline{\text{STOP}}$	L	L	L	L	L	STOP Mode
$\overline{\text{FF}}$	H	H	L	L	L	FF Mode
$\overline{\text{RWD}}$	H	L	L	L	L	RWD Mode
$\overline{\text{FWD}}$	L	L	H	L	L	FWD Mode
$\overline{\text{REV}}$	L	L	L	H	L	REV Mode
$\overline{\text{REC}}/\overline{\text{FWD}}$	L	L	H	L	H	REC/FWD Mode
$\overline{\text{REC}}/\overline{\text{REV}}$	L	L	L	H	H	REC/REV Mode

Chart-3

NOTES:
1. The input signal is activated by the fall of ¯↓_|¯ .
2. The output is maintained until the next input signal.
3. $\overline{\text{AR}}$ is a control input terminal and the REC output is not "H" when $\overline{\text{AR}}$ = "L".
4. When $\overline{\text{AR}}$ = "L" signal is supplied during the REC output is "H", REC output becomes "L".
5. At the moment the power is on, all output will be "L" and the Stop mode will be effected.

4) Regarding the input circuit's diode D13

Previously M54410P has been so designed that the first terminal was $\overline{\text{PLAY}}$ input and the sixth terminal was $\overline{\text{PAUSE}}$ input. But in GX-635D, $\overline{\text{PLAY}}$ is used for $\overline{\text{REV}}$ and $\overline{\text{PAUSE}}$ for $\overline{\text{FWD}}$. Consequently, grounding only the 6th terminal ($\overline{\text{FWD}}$) will not allow the modes to be changed directly from FF or RWD to FWD. For this reason, the first terminal ($\overline{\text{REV}}$) is also grounded through diode D13 releasing FF and RWD. In addition, even if there are simultaneous inputs into both $\overline{\text{FWD}}$ and $\overline{\text{REV}}$, FWD mode output is designed to take priority.

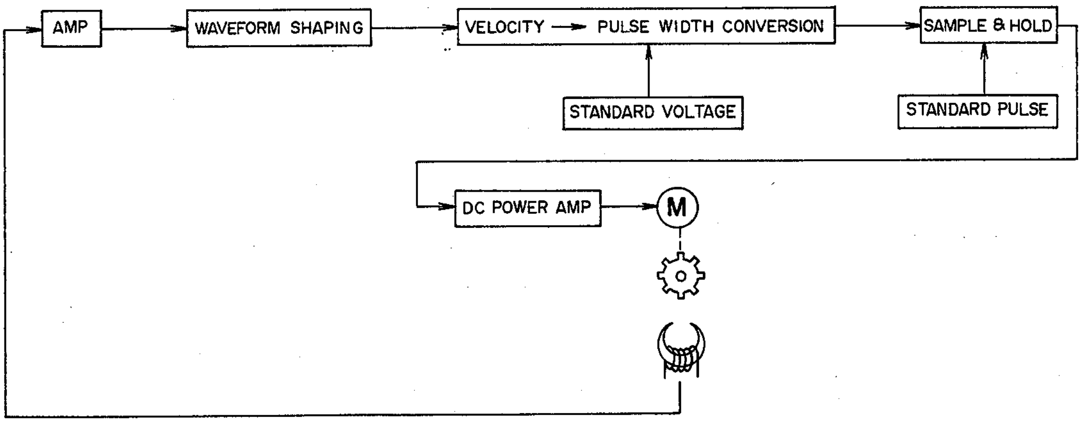


Fig. 5 Block Diagram

1-2. CIRCUIT FOR PREVENTING CLICK NOISE DURING TIMER RECORDING

1) When the power is turned on for timer recording, recording must take place after the amplifier circuit is in full operation or else click noise will be recorded. Also when the power is turned off, Rec Final Mute must operate before the amplifier circuit ceases to operate or else click noise will be recorded. This circuit prevents such click noise from being recorded.
2) In ordinary recording, base electric current flows to TR28 base through R89 and R90, and TR28 is ON. Therefore, Rec Final Mute relay RL1 (Pre Amp P.C Board) connected to TR28 collector is operating to supply the signals to the recording head and the recording mode is effected.
3) When the power is turned ON at timer recording stand-by, base electric current is supplied to TR27 base only while C42 is being charged and TR27 is turned ON. When TR27 is turned ON, electric potential is not supplied to TR28 base and TR28 is turned off. Consequently relay RL1 does not operate and Rec head is not supplied with a signal. Since TR27 turns off once C42 is charged, base electric current flows to TR28 base through R89 and R90.

   Because relay RL1 function only after the amplifier circuit is in complete operation, the click noise is avoided.
4) TR20 and TR21 is OFF during recording mode and for this reason C32 and C33 are charged.

   When the power is turned off in this condition, by the charging voltage on C33 TR20 base will become lower than the emitter in electric potential and turns ON. TR21 is also supplied with electric current thereby and is turned on. When TR21 is turned on, C32 is discharged, and IC1 terminal 2 ($\overline{\text{Stop}}$) becomes ground potential through D24. This releases the deck from the recording mode and the stop mode is effected.

   This operation takes place before the amplifier circuit stops and therefore the click noise is cut out.

2. THE SAMPLE AND HOLD SYSTEM SERVO MOTOR (SCM-200) OPERATION

1) Servo signals generally created proportionately to the number of revolutions of the motor are shown either as frequency deviations or voltage deflections. The motor employed in GX-635D uses frequency deviation unaffected by time constants, etc., of the load circuit as input signal to the motor drive circuit through pulse width conversion.

   This pulse width varies proportionately to the deviations in the number of motor rotations. The deviation is detected, converted to a voltage value, is held at that voltage until the next servo signal pulse, and then impressed into the motor drive circuit.

   Meanwhile, since it requires a holding circuit and because 112 pulse are generated for each motor rotation, time constants of circuits coming before the Sample and Hold circuit can be greatly reduced compared to the conventional voltage deflection detection system.

   For the reasons above, it features quick response to motor revolutions, minimum influence by temperature, and fewer chances of faulty mechanism. In addition, due to the inclusion of the servo voltage holding circuit, ripple content of the servo voltage holding circuit, ripple content of the servo voltage has been sharply reduced to result in a smooth and stable tape transport with a minimum of wow & flutter.

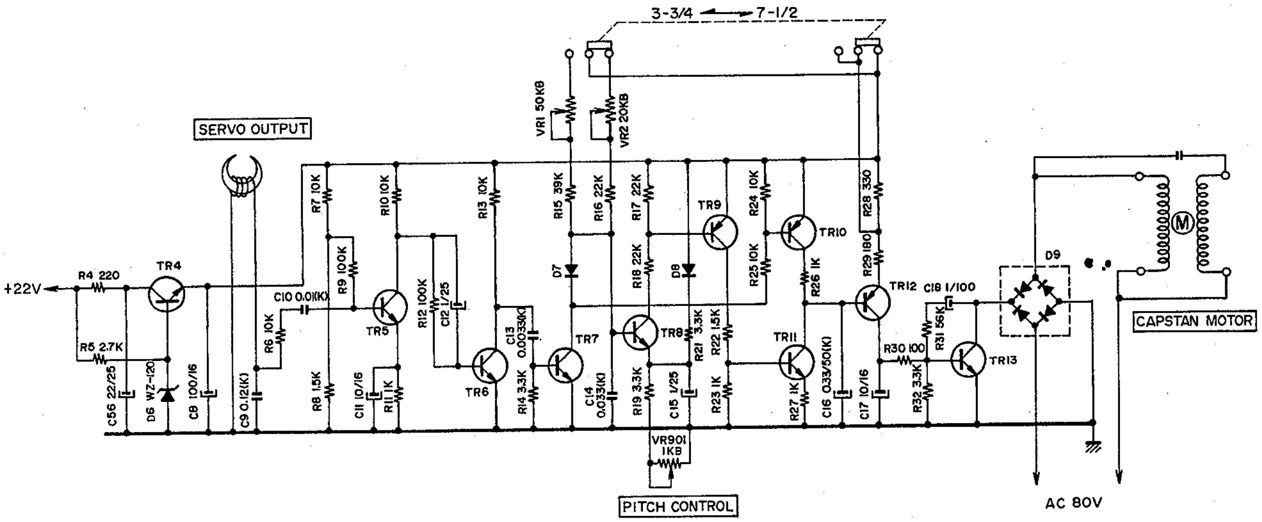

3-3/4 ⟷ 7-1/2
SERVO OUTPUT
+22V
R4 220
TR4
R5 2.7K
C56 22/25
D6 WZ-120
C8 100/16
C9 0.12(K)
R6 10K
C10 0.01(K)
R7 10K
R9 100K
R8 1.5K
R10 10K
TR5
C11 10/16
R11 1K
R12 100K
C12 1/25
TR6
R13 10K
C13 0.033(K)
R14 3.3K
VR1 50KB
VR2 20KB
R15 39K
R16 22K
D7
TR7
C14 0.033(K)
R17 22K
R18 22K
D8
TR8
R19 3.3K
C15 1/25
R21 3.3K
R22 1.5K
R23 1K
VR901 1KB
PITCH CONTROL
TR9
R24 10K
R25 10K
TR10
R26 1K
TR11
R27 1K
C16 0.033/50(K)
R28 330
R29 180
TR12
C17 10/16
C18 1/100
R30 100
R31 56K
R32 3.3K
TR13
D9
M
CAPSTAN MOTOR
AC 80V

Fig. 6

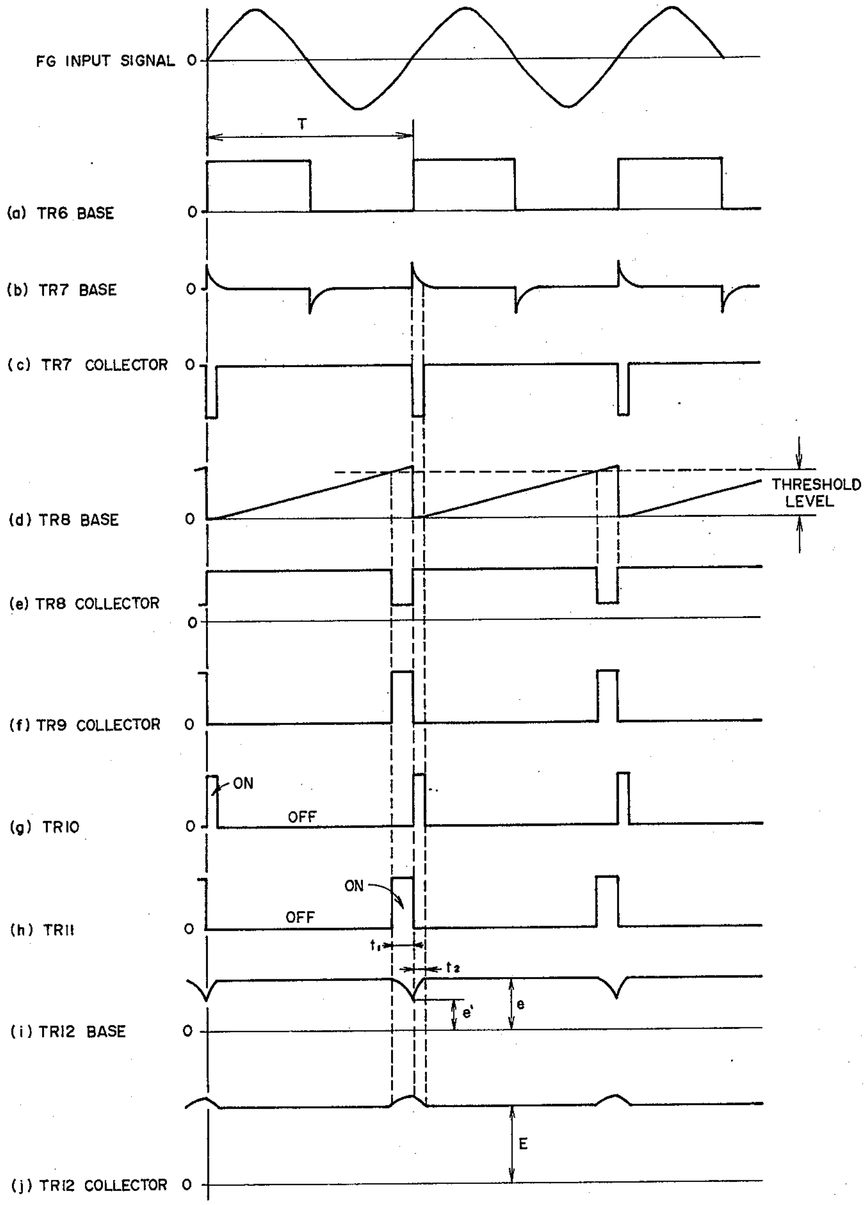

FG INPUT SIGNAL
0
T
(a) TR6 BASE
(b) TR7 BASE
(c) TR7 COLLECTOR
(d) TR8 BASE
THRESHOLD LEVEL
(e) TR8 COLLECTOR
(f) TR9 COLLECTOR
(g) TR10
ON
OFF
(h) TR11
t_1
t_2
(i) TR12 BASE
e'
e
E
(j) TR12 COLLECTOR

Fig. 7

2) Explanation of the circuit operation (Refer to Figs. 6, 7)

The velocity signal obtained from the motor's frequency generator is shaped into a waveform in the period of "T" proportionate to the velocity as in (a) on collector TR6. This signal is differentiated and enters TR7 base. This makes TR7's collector output as in (c) and turns ON TR10 during the time of the negative pulse.

Meanwhile TR8 base is supplied with a waveform like (d) and when it reaches the threshold level, TR8 is turned on. A waveform (e) with pulse width "t_1" is obtained from the collector. During the time "T" that TR28 is ON, TR9 base electric potential decreases to turn ON.

Consequently, TR11 base electric potential increases and TR11 is also turned ON for the time "t_1".

When the period "T" varies with the velocity, the pulse width "t_1" varies according to TR8's threshold level. But when TR10 is on, it is constant due to the time constant. So that by using the period that TR is ON as the standard pulse, the pulse width "t_2" is constant regardless of the velocity.

(g) and (h) show the ON and OFF condition of TR10 and TR11. When the electric charge that was charged to C16 is discharged during the time TR11 is ON "t_1", a signal voltage of "e" proportionate to the velocity can be obtained. Next, with "e" as its basis, C16 is charged during the limited time of the standard pulse width "t_2", and by the charging voltage "e" the charging is stopped. The voltage is then held until the hext standard pulse.

This voltage "e" is supplied to the TR12 base and a servo signal "E" is obtained. This servo signal "E" controls TR13 and drives the motor.

As shown above, since "t_1" and "t_2" are small, servo signal ripples are made small and a near direct current servo signal is obtained. In addition, the time constants of the smoothing circuit can also be made small that phase lag factor can be minimized.

VI. MECHANISM ADJUSTMENT

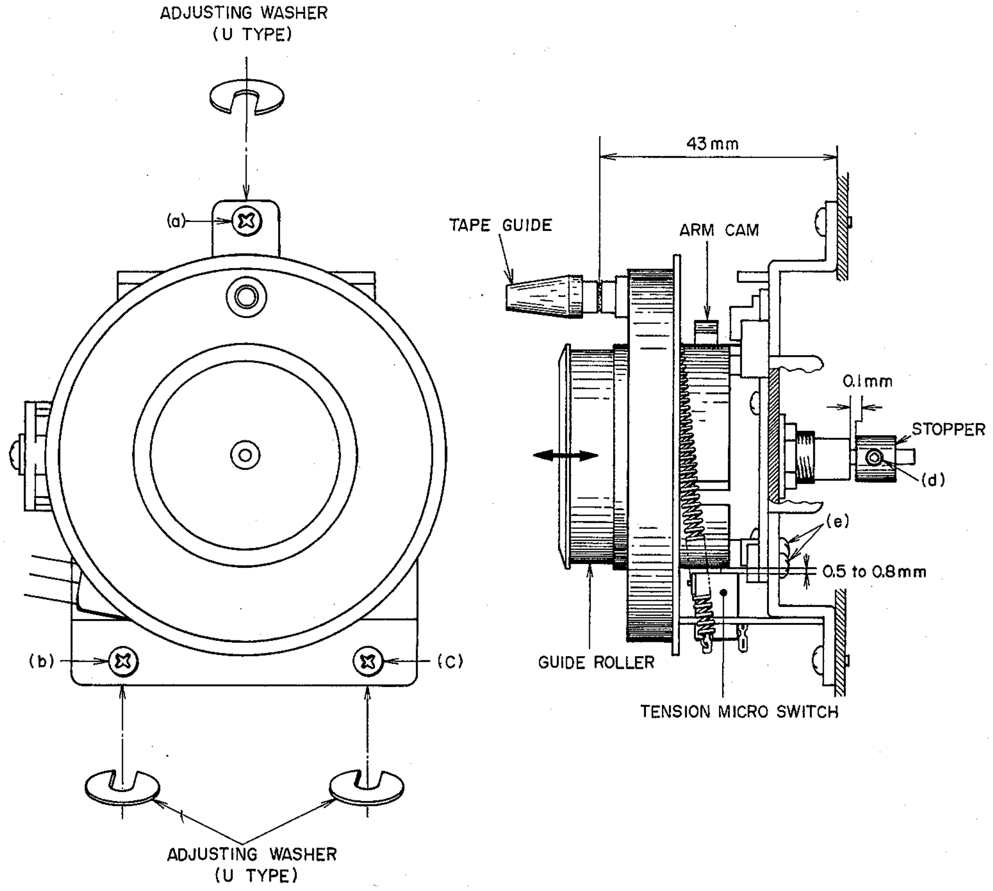

ADJUSTING WASHER (U TYPE)
(a)
(b)
(C)
ADJUSTING WASHER (U TYPE)
43 mm
TAPE GUIDE
ARM CAM
0.1mm
STOPPER
(d)
(e)
0.5 to 0.8mm
GUIDE ROLLER
TENSION MICRO SWITCH

Fig. 8 Roller Block

1. GUIDE ROLLER LOOSE PLAY ADJUSTMENT (Refer to Fig. 8)

Adjust the stopper (roller pulley on the right) screw (d) so that the loose play gap is approximately 0.1 mm when the guide roller is moved as indicated by arrow mark in Fig. 8.

2. TENSION MICRO SWITCH POSITION ADJUSTMENT (Refer to Fig. 8)

Adjust the screws (e) so that the gap between the arm cam and the micro switch is approximately 0.5 to 0.8 mm. Check that the micro switch works and that the arm lock smoothly disengages.

3. ROLLER BLOCK HEIGHT ADJUSTMENT (Refer to Fig. 8)

Use the U type adjusting washers for screws (a), (b), and (c) to adjust the roller block height: the distance between the tape guide center to the chassis board should be 43 mm.

NOTE: Steps 1 and 3 also apply to the right guide roller.

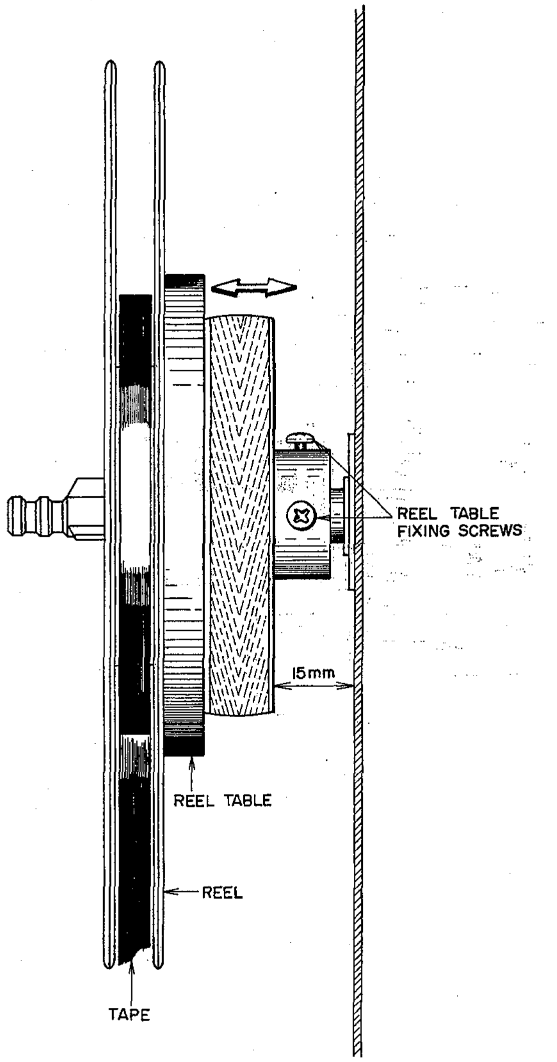

REEL TABLE
FIXING SCREWS
15mm
REEL TABLE
REEL
TAPE

Fig. 9

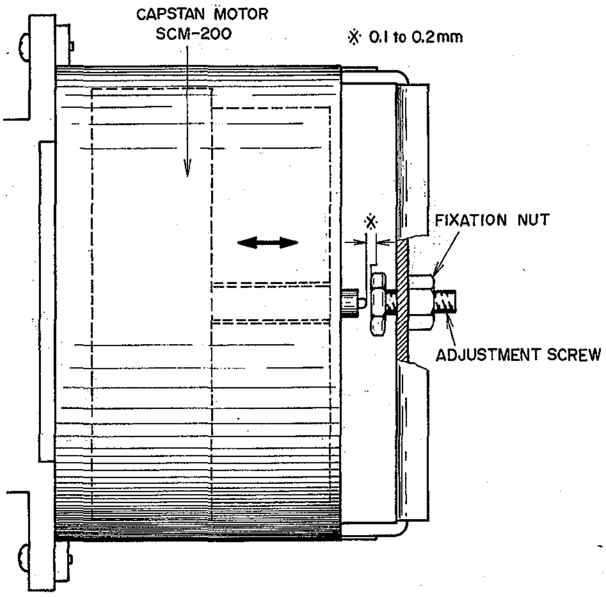

CAPSTAN MOTOR
SCM-200
※ 0.1 to 0.2mm
※
FIXATION NUT
ADJUSTMENT SCREW

Fig. 10

4. REEL TABLE HEIGHT ADJUSTMENT (Refer to Fig. 9)

1) Temporarily screw in the fixing screws leaving a gap of 15 mm between the reel table and the chassis board.
2) Run the tape and adjust the height of the reel table so that the tape is taken up in the center of the reel. Tighten fixing screws.
   Adjust the height of the right reel table at fast forward, of the left reel table at rewind.

5. CAPSTAN SHAFT LOOSE PLAY ADJUSTMENT (Refer to Fig. 10)

Adjust by turning Adjustment Screw to obtain a 0.1 to 0.2 mm degree of loose play when the capstan shaft is moved as indicated by the arrow mark. Tighten fixation nut to maintain optimum adjusted condition.

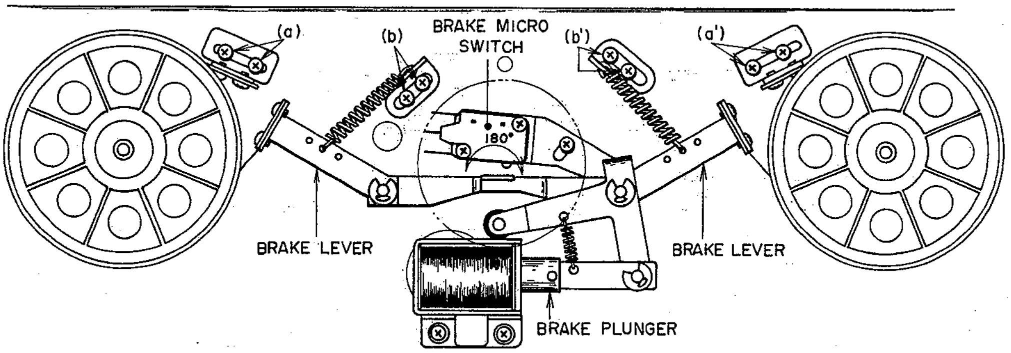

(a)
(b)
BRAKE MICRO SWITCH
(b')
(a')
180°
BRAKE LEVER
BRAKE LEVER
BRAKE PLUNGER

Fig. 11

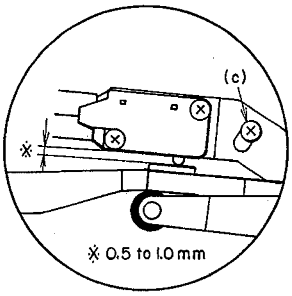


Fig. 13

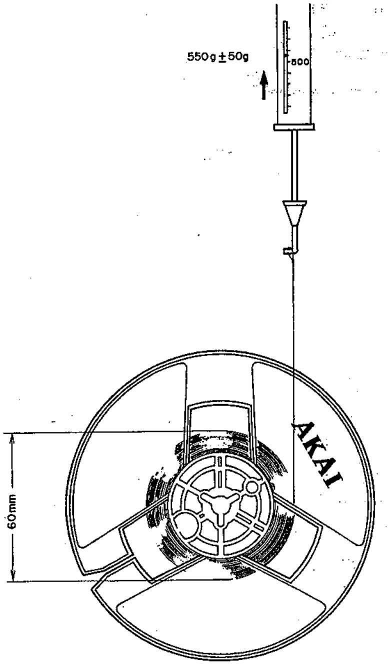

550g±50g
500
AKAI
60mm

Fig. 12

6. BRAKE BAND POSITION ADJUSTMENT AND BRAKE TENSION ADJUSTMENT

(Refer to Figs. 11 to 13)

1) Adjust the brake lever to 180° position by loosening the screws (a) and (a').
2) Work the brake plunger to check that the brake band is not slanted.
3) Adjust the position of the part with screws (b) and (b') to obtain a brake tension of 550 ± 50g on both brakes at stop mode.
   (Use a 1000g spring gauge for a reel with 60 mm diameter of tape.)
   In case the specified brake tension cannot be obtained, connect the springs to the other holes on the brake lever and adjust.
4) By working the brake plunger with a finger, adjust the position of the microswitch screw (c) so that the gap between the brake lever and the microswitch body is 0.5 to 1.0 mm.

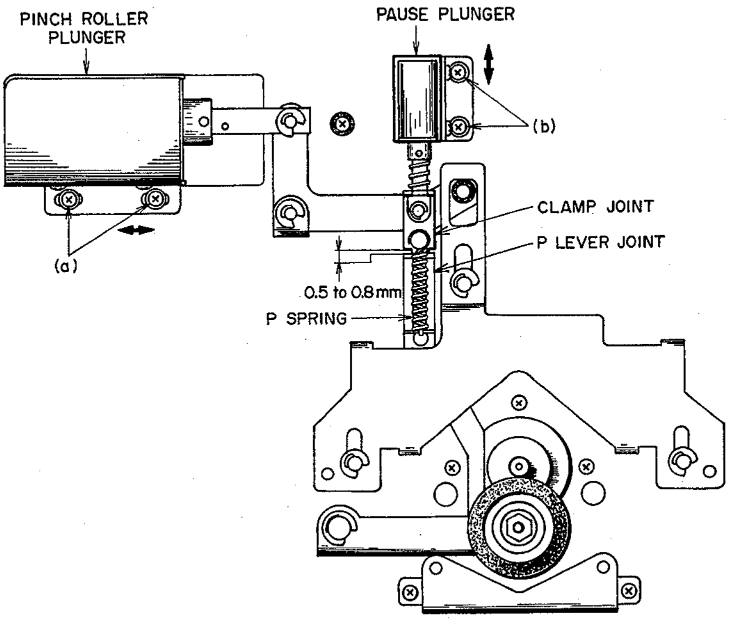

PINCH ROLLER PLUNGER
PAUSE PLUNGER
(b)
CLAMP JOINT
P LEVER JOINT
(a)
0.5 to 0.8mm
P SPRING

Fig. 14

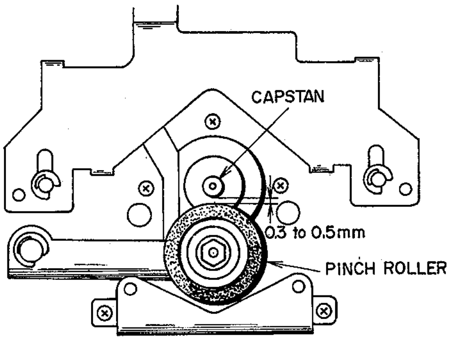

CAPSTAN
0.3 to 0.5mm
PINCH ROLLER

Fig. 15

7. PINCH ROLLER POSITION ADJUSTMENT (Refer to Fig. 14)

At the play mode, the gap between the clamp joint and the P lever joint should be 0.5 to 0.8 mm. Adjust the pinch roller plunger position with screws (a).

8. PAUSE PLUNGER POSITON ADJUSTMENT (Refer to Figs. 14, 15)

At the pause mode, the gap between the capstan and the pinch roller should be 0.3 to 0.5 mm. Adjust the pause plunger position with screws (b).

9. PINCH ROLLER PRESSURE ADJUSTMENT

Connect a 2 kg spring gauge to the pinch roller fixing screws. Pull down the pinch roller and then let it slowly move back. Check that the spring gauge reads 1.2 kg ±200g at the moment the pinch roller touches the capstan and starts rolling. If it reads otherwise, replace the P spring (See Fig. 14).

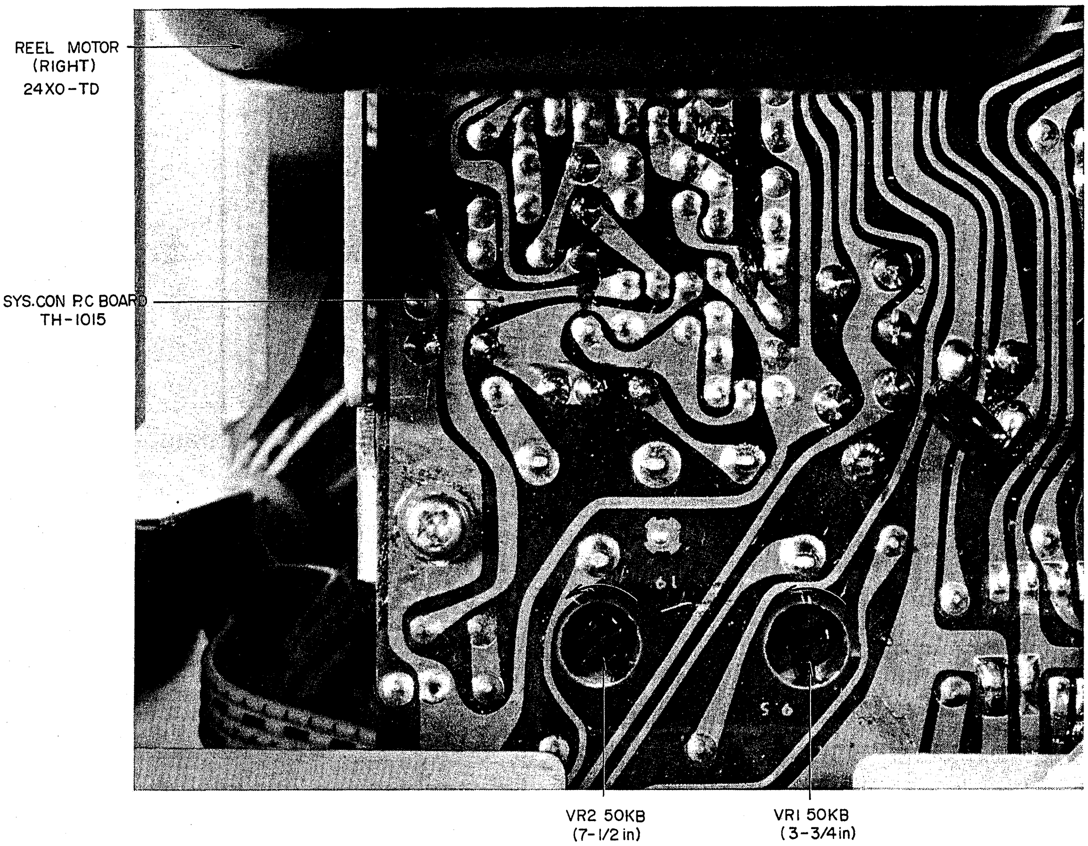

REEL MOTOR
(RIGHT)
24XO-TD
SYS.CON P.C BOARD
TH-1015
VR2 50KB
(7-1/2 in)
VR1 50KB
(3-3/4in)

Fig. 16

10. TAPE SPEED ADJUSTMENT (Refer to Fig. 16)

Set the Tape Speed Switch to 7-1/2 ips and playback the 1,000 Hz, 7-1/2 Test tape.

Connect a frequency counter to LINE OUT and adjust VR2 50 kB until the counter reads 1,000 Hz ±0.5%.

Next, set the Tape Speed Switch to 3-3/4 ips and adjust VR1 50 kB until the frequency counter reads 500 Hz ±0.5%.

VII. HEAD ADJUSTMENT

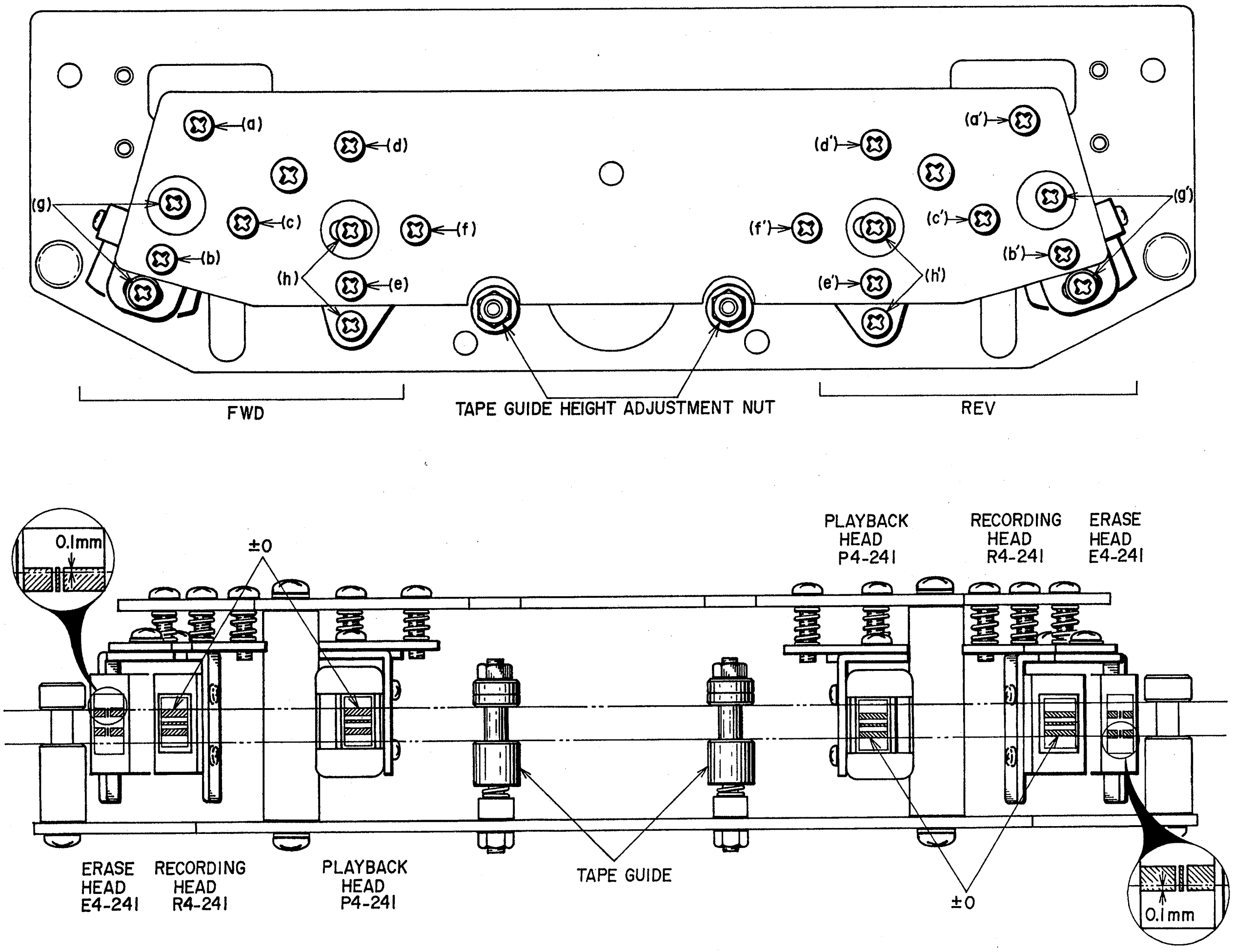

(a)
(d)
(g)
(c)
(f)
(b)
(h)
(e)
(a')
(d')
(g')
(f')
(c')
(b')
(e')
(h')
FWD
TAPE GUIDE HEIGHT ADJUSTMENT NUT
REV
0.1mm
±0
PLAYBACK HEAD P4-241
RECORDING HEAD R4-241
ERASE HEAD E4-241
ERASE HEAD E4-241
RECORDING HEAD R4-241
PLAYBACK HEAD P4-241
TAPE GUIDE
±0
0.1mm

Fig. 17

Step	Adjustment Item	Test Tape Supply Signal	Mode	Adjustment Point	Remarks
1	Tape Guide Height	Optional	FWD	Tape Guide Height Adjustment Nut	1) Adjust so that tape travels smoothly and does not twist. 2) Do not thread tape over tension arm.
2	FWD Recording Head Height	Optional	FWD	(a) (b) (c)	Upper edges of Left Ch. head core and tape are the same height.
3	FWD Erase Head Height Confirmation	Optional	FWD		Upper edge of Left Ch. head core is 0.1 mm higher than upper edge of tape.
4	FWD Playback Head Height	Optional	FWD	(d) (e) (f)	Upper edges of Left Ch. head core and tape are the same height.
5	FWD Playback Head Azimuth Alighment	8,000 Hz 3-3/4 ips Test Tape	FWD	(f)	Maximum output, both channels.
6	FWD Playback Head Angle Alignment	8,000 Hz 3-3/4 ips Test Tape	FWD	(h)	Adjust head gap surface so that there is no change in output level when tension is applied to the supply reel side.
7	FWD Recording Head Azimuth Alignment	Scotch #211 Tape 15,000 Hz −20 dBm	REC	(c)	Maximum output, both channels.
8	FWD Recording Head Angle Alignment	Scotch #211 Tape 15,000 Hz −20 dBm	REC	(g)	Adjust head gap surface so that there is no change in output level when tension is applied to the supply reel side.

Chart-4

NOTES:

1. As perfect head adjustments are vital to tape deck performance, be sure that these adjustments are carried out properly.
2. Be careful not to use a magnetized driver or other magnetized tools in the vicinity of the heads.
3. Use only new tape as level variation is likely to occur when using old tape.
4. Demagnetize heads with head demagnetizer before and after head adjustment.
5. Set tape speed to 7-1/2 ips.
6. Adjustments outlined in Chart 4 are only for FWD side heads. However, adjustments for REV side heads are exactly the same.

VIII. AMPLIFIER ADJUSTMENT

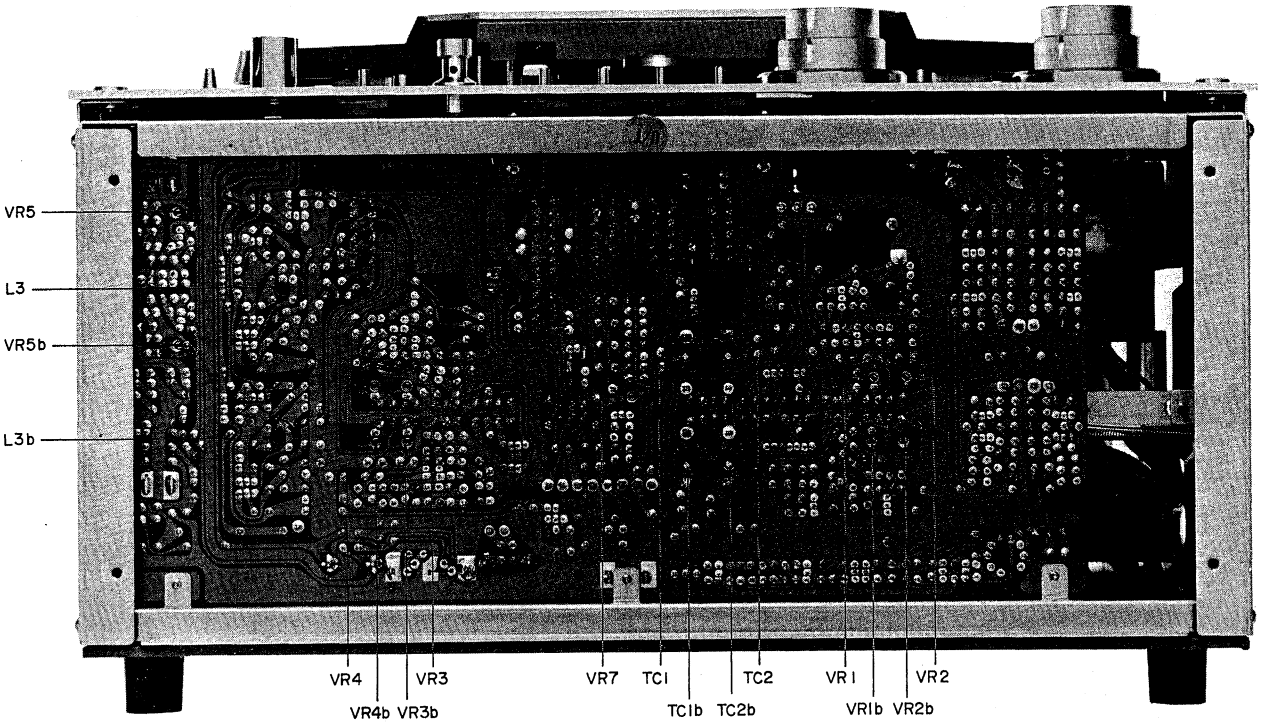

VR5
L3
VR5b
L3b
VR4
VR3
VR4b
VR3b
VR7
TC1
TC2
VR1
VR2
TC1b
TC2b
VR1b
VR2b

Fig. 18

VR3	50 kB	FWD Playback Level Adjustment
VR4	50 kB	REV Playback Level Adjustment
VR5	1 kB	VU Meter Sensitivity Adjustment
VR2	10 kB	FWD Recording Level Adjustment
VR1	10 kB	REV Recording Level Adjustment
TC2	80 PF	FWD Frequency Response Adjustment (3-3/4 in)
TC1	80 PF	REV Frequency Response Adjustment (3-3/4 in)
VR7	30 kB	Frequency Response Adjustment (7-1/2 in)
L3		Bias Filter Adjustment

*** The letter "b" following an adjustment part number indicates "RIGHT CHANNEL".**

Step	Adjustment Item	Test Tape Supply Signal	Mode	Adjustment Point	Result	Remarks
1	FWD Playback Level	700Hz 7-1/2 ips 0VU Test Tape	FWD	VR3 50 kB	0±0.5dBm (0.775V)	
2	REV Playback Level	700Hz 7-1/2 ips 0VU Test Tape	REV	VR4 50 kB	0±0.5dBm (0.775V)	
3	VU Meter Sensitivity	700Hz 7-1/2 ips 0VU Test Tape	FWD	VR5 1 kB	0 VU indication	
4	FWD Recording Level	Scotch #211 Tape 1,000 Hz 0 dBm Recording	FWD-REC	VR2 10 kB	0±0.5dBm (0.775V)	
5	REV Recording Level	Scotch #211 Tape 1,000 Hz 0 dBm Recording	REV-REC	VR1 10 kB	0±0.5dBm (0.775V)	
6	FWD Frequency Response (3-3/4 ips)	Scotch #211 Tape 1.5kHz, 15kHz –20dBm Recording	FWD-REC	TC2	1.5 kHz, 15 kHz flat	Tape Speed 3-3/4 ips. Recheck Recording Level.
7	REV Frequency Response (3-3/4 ips)	Scotch #211 Tape 1.5kHz, 15kHz –20dBm Recording	REV-REC	TC1	1.5 kHz, 15 kHz flat	Tape Speed 3-3/4 ips. Recheck Recording Level.
8	Frequency Response (7-1/2 ips)	Scotch #211 Tape 1.5kHz, 15kHz –20dBm Recording	FWD-REC	VR7 30 kB	1.5 kHz, 15 kHz flat	Tape Speed 7-1/2 ips. Recheck Recording Level.
9	FWD Distortion Confirmation	Scotch #211 Tape 1,000Hz 0 dBm Recording	FWD-REC		Less than 0.5%	See NOTE 4
10	REV Distortion Confirmation	Scotch #211 Tape 1,000 Hz, 0 dBm Recording	REV-REC		Less than 0.5%	See NOTE 4
11	Bias Filter		REC	L3	Less than –30 dB	Mic, Line Volume at Max. See NOTE 5.

Chart-5

NOTES:
1. Output Level Control should be at maximum.
2. Except for Steps 6 and 7, set Tape Speed to 7-1/2 ips.
3. Set Tape Selector Switch to Low Noise position.
4. If it does not comply with the specifications, repeat Steps 6 and 7, and re-adjust.
5. Unless the core is moved intentionally this adjustment is not necessary.

IX. DC RESISTANCE OF VARIOUS COILS

Part	Designation	DC Resistance
Main Motor	SCM-200	Between BLU-RED: 110 ohms Between YLW-BRN: 170 ohms Pick-up Coil: 665 ohms
Reel Motor	24X0-TD	Between BLU-RED: 30 ohms Between YLW-BRN: 157 ohms
Pinch Roller Plunger	1664TLT	700 ohms ±10%
Brake Plunger, REV Plunger	1240TLT	600 ohms ±10%
Pause Plunger	TDS-07A	600 ohms ±10%
Relay	FRL-264	650 ohms ±15%
Relay	BR211	1,280 ohms ±10%
Relay	LAB2NS	1,750 ohms ±10%
Erase Head	E4-241	2.1 ohms
Recording Head	R4-241	5.9 ohms
Playback Head	P4-241	219 ohms

Chart-6

X. CLASSIFICATION OF VARIOUS P.C BOARDS

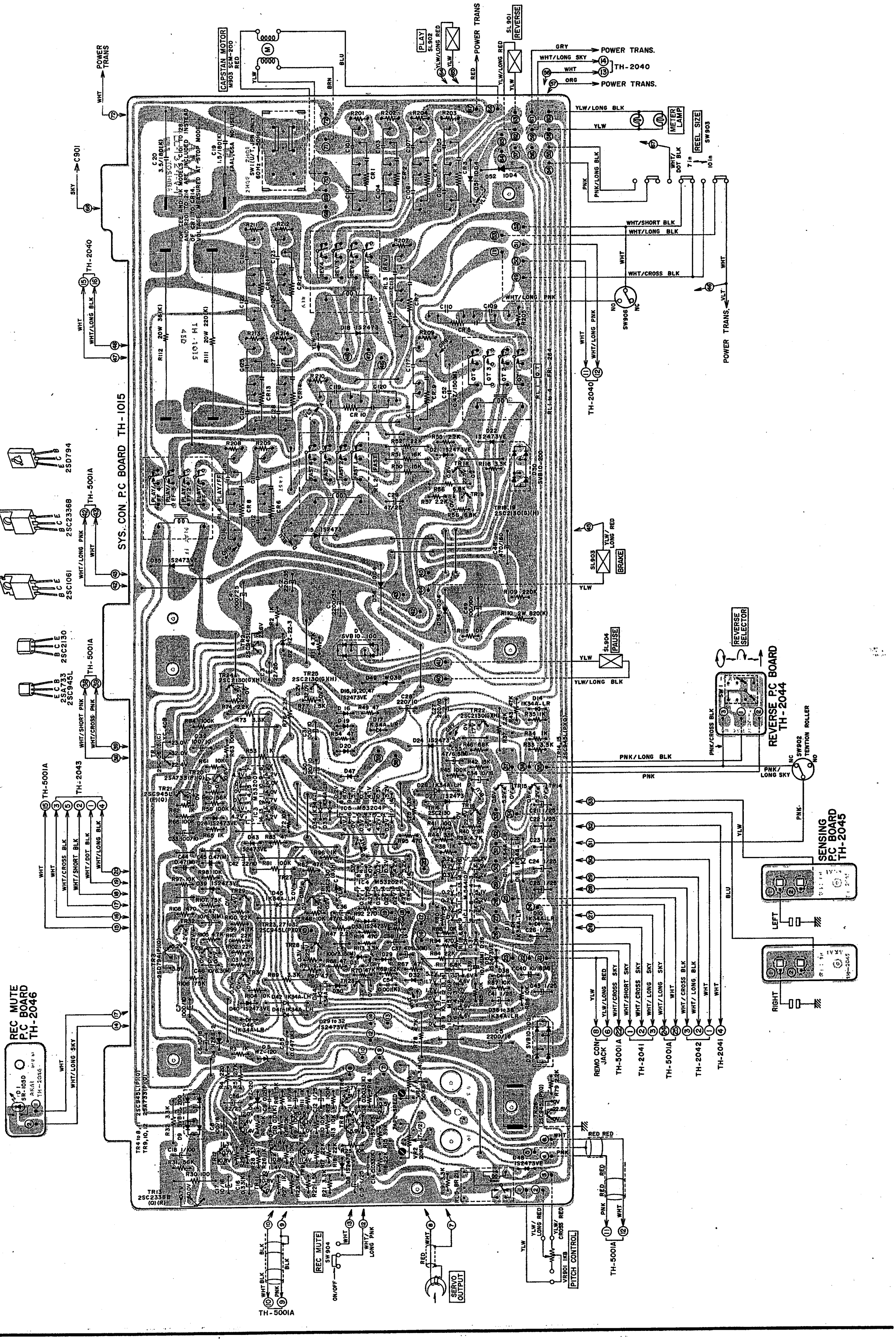
1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

P.C Board Title	P.C Board Number
Sys. Con P.C Board	TH-1015
Pre Amp P.C Board	TH-5001A
Rec LED P.C Board	TH-5001B
Volume P.C Board	TH-5002
Fuse P.C Board	TH-2040
Operation P.C Board (A)	TH-2041
Operation P.C Board (B)	TH-2042
Direction P.C Board	TH-2043
Reverse P.C Board	TH-2044
Sensing P.C Board	TH-2045
Rec Mute P.C Board	TH-2046

Chart-7

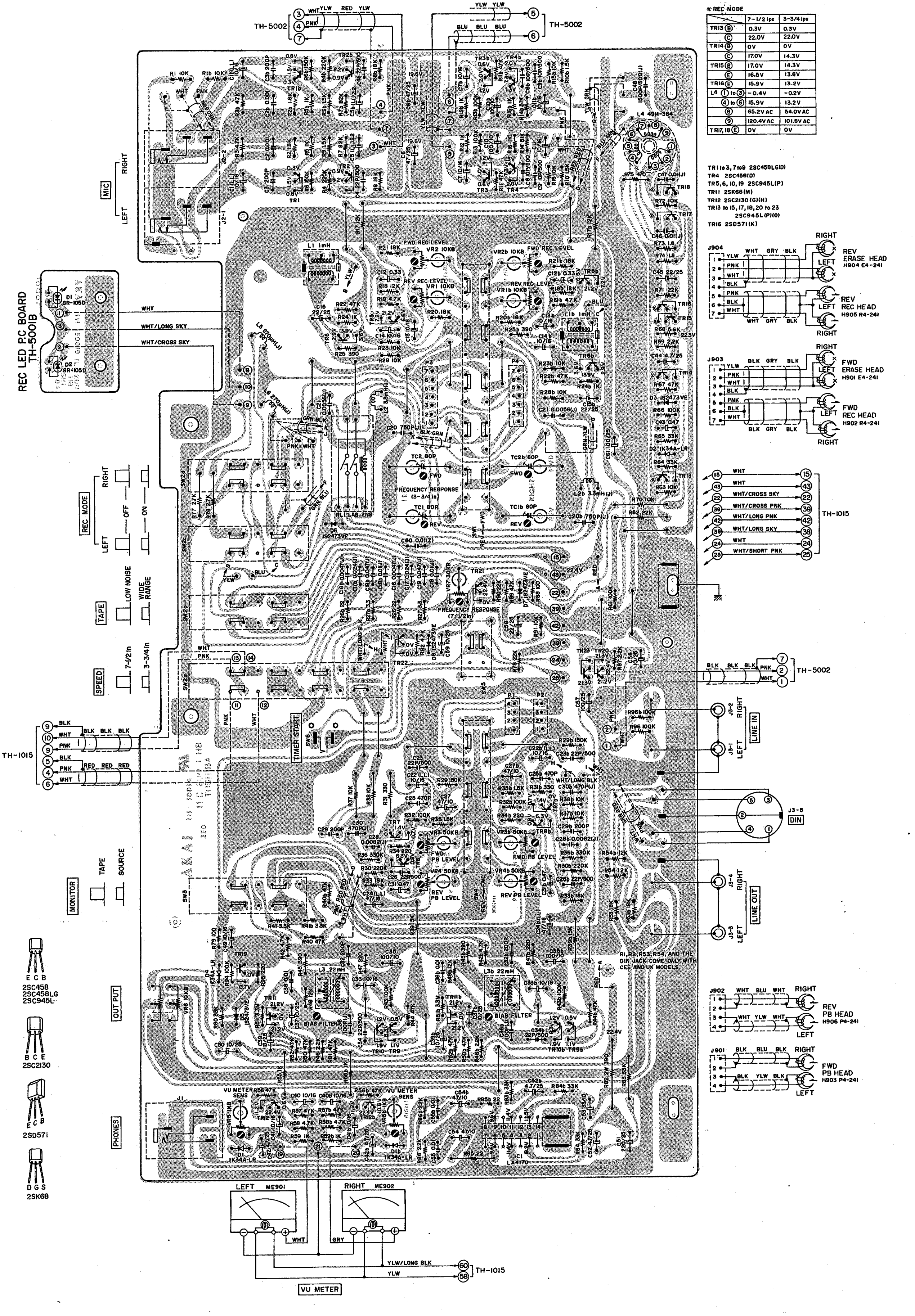
2. COMPOSITION OF VARIOUS P.C BOARDS

1) SYS. CON P.C BOARD TH-1015 (4ED), REVERSE P.C BOARD TH-2044, SENSING P.C BOARD TH-2045 & REC MUTE P.C BOARD TH-2046



SYS. CON. P.C BOARD TH-1015
CAPSTAN MOTOR M903 SCM-200
PLAY SL902
REVERSE SL901
POWER TRANS.
TH-2040
METER LAMP
REEL SIZE SW903
SW906
BRAKE SL903
PAUSE SL904
REVERSE SELECTOR
REVERSE P.C BOARD TH-2044
SW902 TENTION ROLLER
SENSING P.C BOARD TH-2045
LEFT
RIGHT
REC MUTE P.C BOARD TH-2046
REC MUTE SW904
SERVO OUTPUT
VR901 1KB PITCH CONTROL
REMO CON JACK
TH-5001A
TH-2041
TH-2042
TH-2043
2SD794
2SC2336B
2SC1061
2SC2130
2SA733
2SC945L

2) PRE AMP P.C BOARD TH-5001A (2ED) & REC LED P.C BOARD TH-5001B

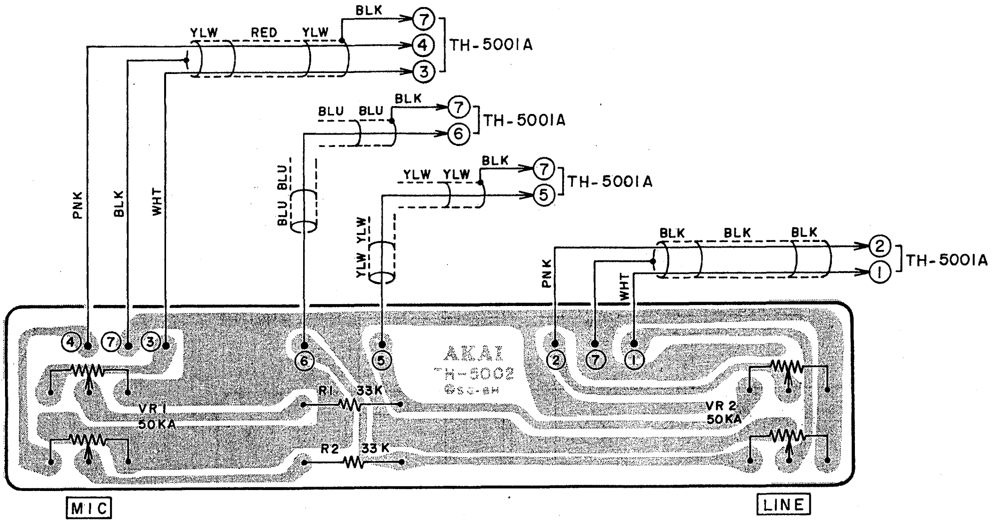

TH-5002
REC LED P.C BOARD TH-5001B
MIC
RIGHT
LEFT
REC MODE
OFF
ON
TAPE
LOW NOISE
WIDE RANGE
SPEED
7-1/2in
3-3/4in
MONITOR
TAPE
SOURCE
OUT PUT
PHONES
TH-1015
TIMER START
FREQUENCY RESPONSE (3-3/4 in)
FREQUENCY RESPONSE (7-1/2in)
FWD REC LEVEL
REV REC LEVEL
FWD PB LEVEL
REV PB LEVEL
BIAS FILTER
VU METER SENS
J904
REV ERASE HEAD H904 E4-241
REV REC HEAD H905 R4-241
J903
FWD ERASE HEAD H901 E4-241
FWD REC HEAD H902 R4-241
LINE IN
DIN
LINE OUT
J902
REV PB HEAD H906 P4-241
J901
FWD PB HEAD H903 P4-241
LEFT ME901
RIGHT ME902
VU METER
R1,R2,R53,R54, AND THE DIN JACK COME ONLY WITH CEE AND UK MODELS.
E C B
2SC458
2SC458LG
2SC945L
B C E
2SC2130
E C B
2SD571
D G S
2SK68

※ REC MODE

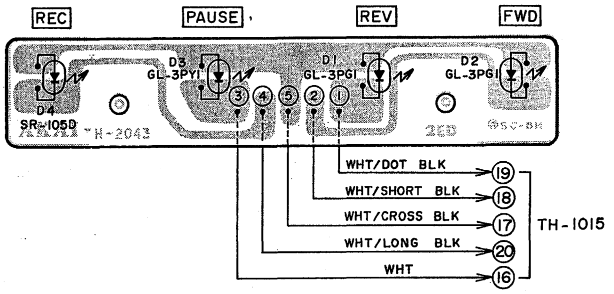
	7-1/2 ips	3-3/4 ips
TR13 Ⓑ	0.3V	0.3V
Ⓒ	22.0V	22.0V
TR14 Ⓑ	0V	0V
Ⓒ	17.0V	14.3V
TR15 Ⓑ	17.0V	14.3V
Ⓔ	16.5V	13.8V
TR16 Ⓔ	15.9V	13.2V
L4 ① to ③	-0.4V	-0.2V
④ to ⑥	15.9V	13.2V
⑧	65.2V AC	54.0V AC
⑨	120.4V AC	101.8V AC
TR17, 18 Ⓔ	0V	0V

TR1 to 3, 7 to 9 2SC458LG(D)
TR4 2SC458(D)
TR5, 6, 10, 19 2SC945L(P)
TR11 2SK68(M)
TR12 2SC2130(G)(H)
TR13 to 15, 17, 18, 20 to 23 2SC945L(P)(Q)
TR16 2SD571(K)

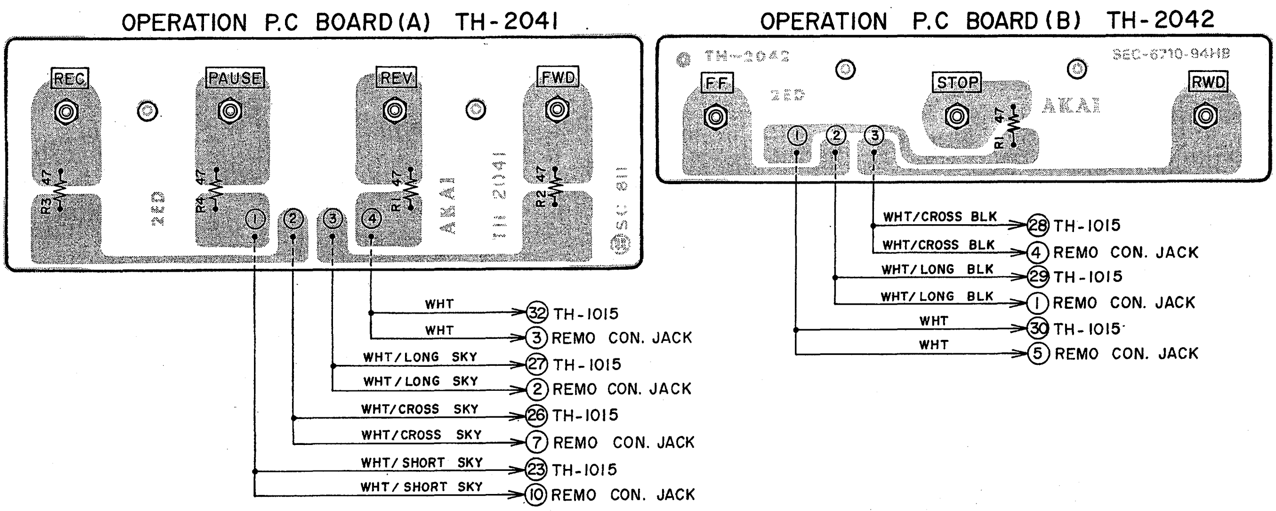
3) VOLUME P.C BOARD TH-5002


BLK
YLW RED YLW
TH-5001A
BLU BLU
TH-5001A
YLW YLW
TH-5001A
BLK BLK BLK
TH-5001A
PNK
BLK
WHT
BLU BLU
YLW YLW
PNK
WHT
AKAI
TH-5002
R1 33K
R2 33K
VR1 50KA
VR 2 50KA
MIC
LINE

4) DIRECTION P.C BOARD TH-2043 (2ED)


REC
PAUSE
REV
FWD
D3 GL-3PY1
D1 GL-3PG1
D2 GL-3PG1
D4 SR-105D
AKAI TH-2043
2ED
WHT/DOT BLK
WHT/SHORT BLK
WHT/CROSS BLK
WHT/LONG BLK
WHT
TH-1015

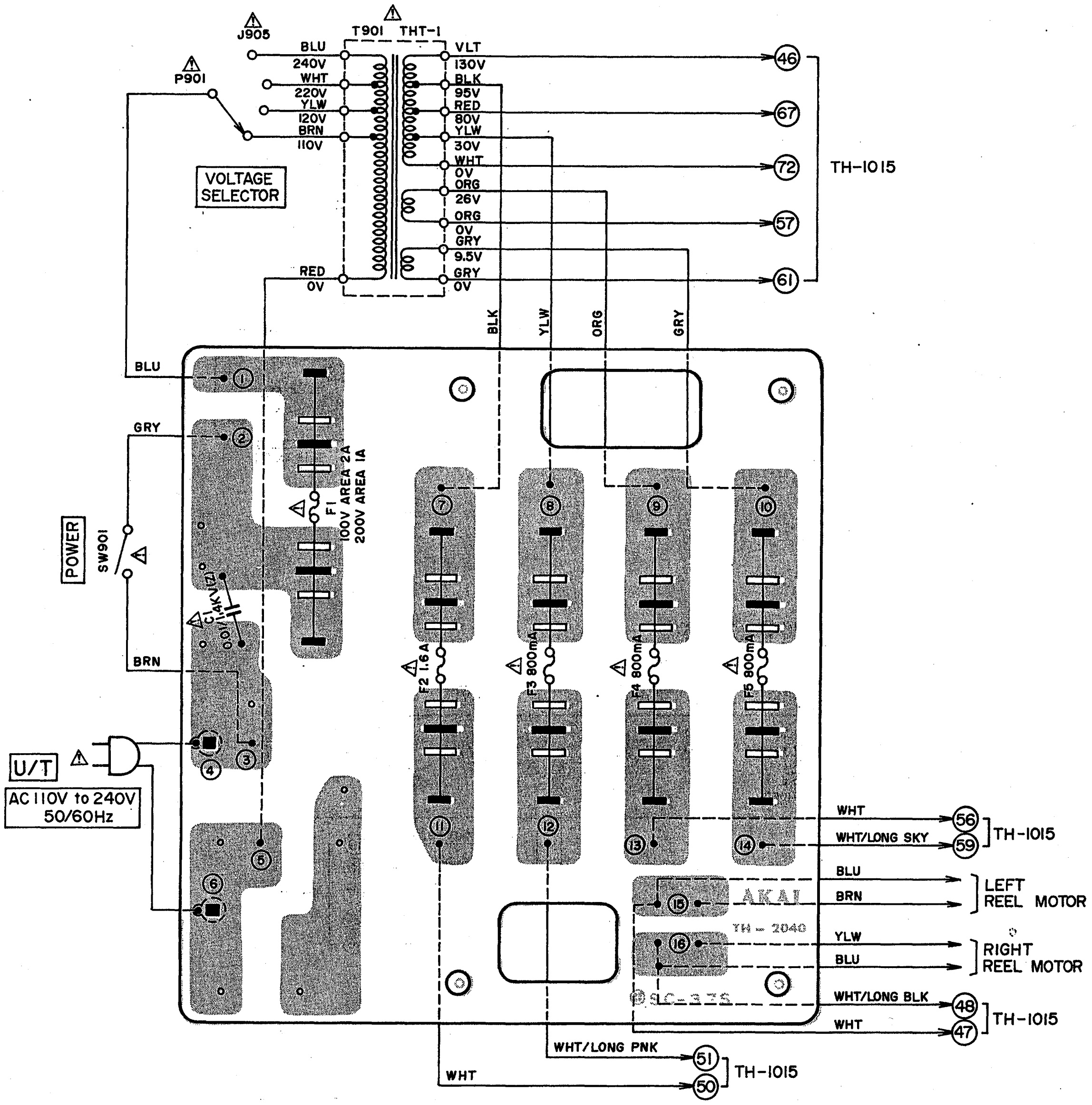
5) OPERATION P.C BOARD (A) TH-2041 (2ED) & OPERATION P.C BOARD (B) TH-2042 (2ED)


OPERATION P.C BOARD (A) TH-2041

OPERATION P.C BOARD (B) TH-2042

REC
PAUSE
REV
FWD
R3 47
R4 47
R1 47
R2 47
2ED
AKAI
TH 2041
WHT
WHT
WHT/LONG SKY
WHT/LONG SKY
WHT/CROSS SKY
WHT/CROSS SKY
WHT/SHORT SKY
WHT/SHORT SKY
32 TH-1015
3 REMO CON. JACK
27 TH-1015
2 REMO CON. JACK
26 TH-1015
7 REMO CON. JACK
23 TH-1015
10 REMO CON. JACK
TH-2042
SEC-6710-94HB
FF
2ED
STOP
R1 47
AKAI
RWD
WHT/CROSS BLK
WHT/CROSS BLK
WHT/LONG BLK
WHT/LONG BLK
WHT
WHT
28 TH-1015
4 REMO CON. JACK
29 TH-1015
1 REMO CON. JACK
30 TH-1015
5 REMO CON. JACK

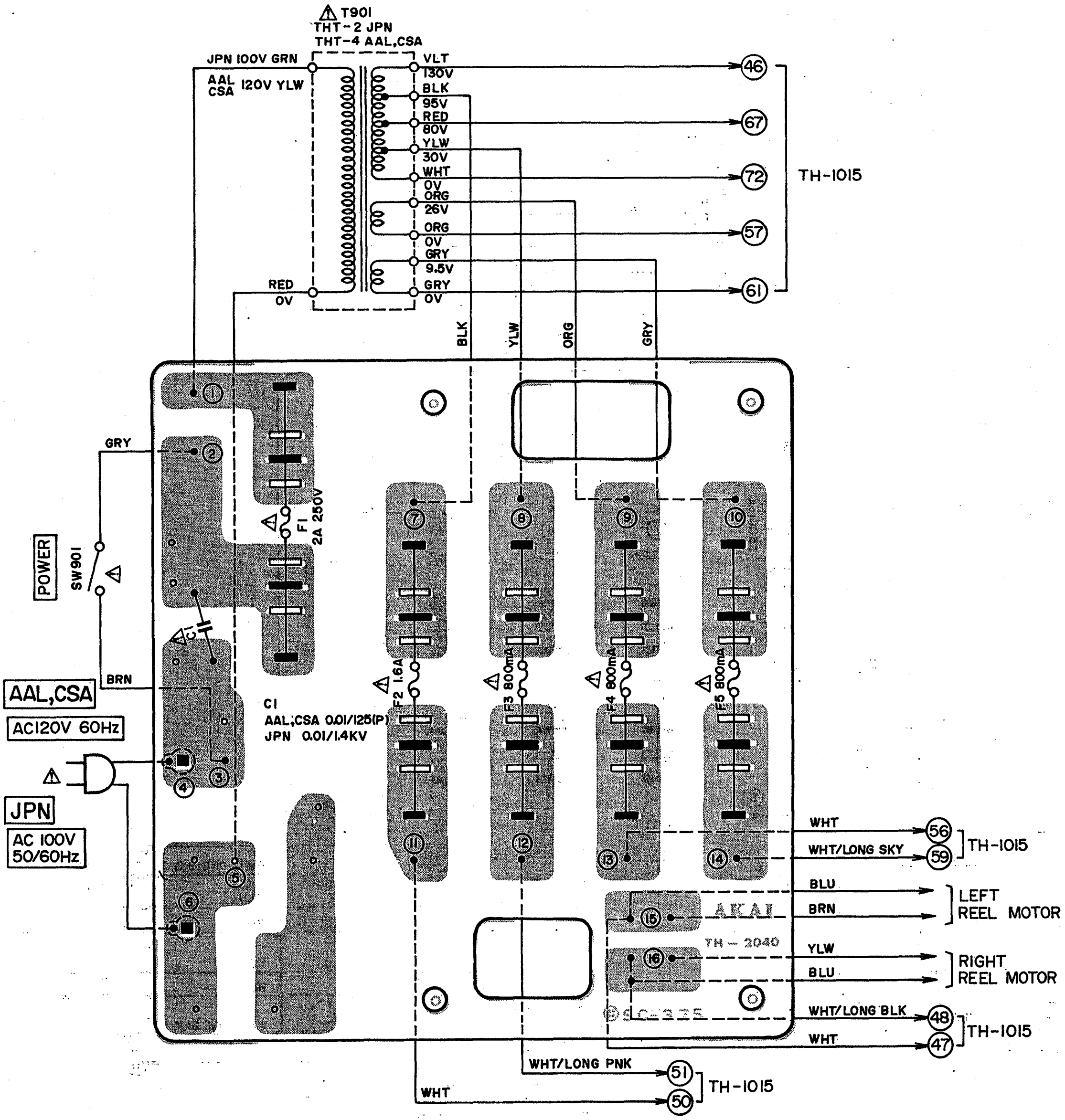
6) FUSE P.C BOARD TH-2040 (U/T)


J905
P901
T901 THT-1
BLU
240V
WHT
220V
YLW
120V
BRN
110V
VOLTAGE SELECTOR
RED
0V
VLT
130V
BLK
95V
RED
80V
YLW
30V
WHT
0V
ORG
26V
ORG
0V
GRY
9.5V
GRY
0V
(46)
(67)
(72)
(57)
(61)
TH-1015
BLK
YLW
ORG
GRY
BLU
GRY
POWER
SW901
BRN
F1
100V AREA 2A
200V AREA 1A
C1
0.01/1.4KV(Z)
U/T
AC 110V to 240V
50/60Hz
F2 1.6A
F3 800mA
F4 800mA
F5 800mA
WHT
WHT/LONG SKY
(56)
(59)
TH-1015
BLU
BRN
LEFT REEL MOTOR
AKAI
TH – 2040
YLW
BLU
RIGHT REEL MOTOR
WHT/LONG BLK
WHT
(48)
(47)
TH-1015
WHT/LONG PNK
WHT
(51)
(50)
TH-1015

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

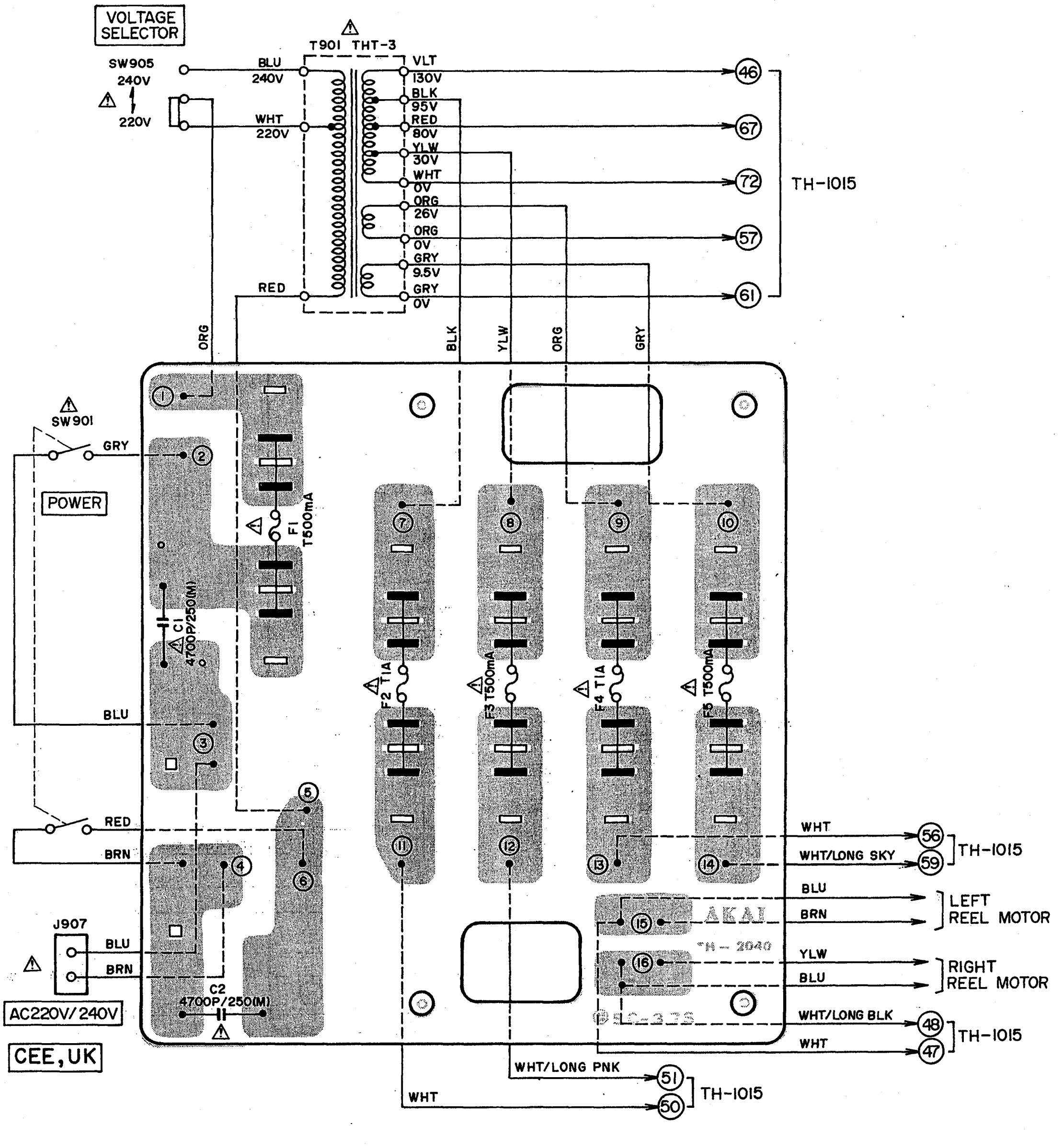
7) FUSE P.C BOARD TH-2040 (JPN, AAL, CSA)


⚠ T901
THT-2 JPN
THT-4 AAL,CSA
JPN 100V GRN
AAL CSA 120V YLW
RED 0V
VLT 130V
BLK 95V
RED 80V
YLW 30V
WHT 0V
ORG 26V
ORG 0V
GRY 9.5V
GRY 0V
(46)
(67)
(72)
(57)
(61)
TH-1015
BLK
YLW
ORG
GRY
GRY
POWER
SW901
BRN
AAL,CSA
AC120V 60Hz
JPN
AC 100V 50/60Hz
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
F1 2A 250V
C1
C1
AAL;CSA 0.01/125(P)
JPN 0.01/1.4KV
F2 1.6A
F3 800mA
F4 800mA
F5 800mA
AKAI
TH-2040
WHT
WHT/LONG SKY
(56)
(59)
TH-1015
BLU
BRN
LEFT REEL MOTOR
YLW
BLU
RIGHT REEL MOTOR
WHT/LONG BLK
WHT
(48)
(47)
TH-1015
WHT/LONG PNK
WHT
(51)
(50)
TH-1015

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

8) FUSE P.C BOARD TH-2040, (CEE, UK)


VOLTAGE SELECTOR
SW905
240V
220V
⚠
T901 THT-3
BLU
240V
WHT
220V
RED
VLT
130V
BLK
95V
RED
80V
YLW
30V
WHT
0V
ORG
26V
ORG
0V
GRY
9.5V
GRY
0V
46
67
72
57
61
TH-1015
ORG
BLK
YLW
ORG
GRY
SW901
GRY
POWER
BLU
RED
BRN
J907
BLU
BRN
AC220V/240V
CEE, UK
F1 T500mA
C1 4700P/250(M)
C2 4700P/250(M)
F2 T1A
F3 T500mA
F4 T1A
F5 T500mA
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
AKAI
TH-2040
WHT
WHT/LONG SKY
56
59
TH-1015
BLU
BRN
LEFT REEL MOTOR
YLW
BLU
RIGHT REEL MOTOR
WHT/LONG BLK
WHT
48
47
TH-1015
WHT/LONG PNK
WHT
51
50
TH-1015

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

MEMO

MEMO

MEMO

MEMO

SECTION 2

PARTS LIST

TABLE OF CONTENTS

1. RECOMMENDED SPARE PARTS LIST 46
2. HEAD BLOCK 48
3. MOTOR (SCM-200) BLOCK 50
4. REEL TABLE BLOCK 51
5. ROLLER BLOCK 52
6. POWER SUPPLY BLOCK 54
7. MECHA ASSEMBLY BLOCK 56
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   (2) PRE AMP P.C BOARD (TH-5001A) BLOCK 59
   (3) VOL. P.C BOARD (TH-5002) BLOCK 59
   (4) REC, LED P.C BOARD (TH-5001B) BLOCK 59
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INDEX 65

Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

HOW TO USE THIS PARTS LIST

1. This parts list is compiled by various individual blocks based on assembly process.
2. When ordering parts, please describe parts number, serial number, and model number in detail.
3. How to read List

The reference number corresponds with illustration or photo number of that particular parts list.

This number corresponds with the Figure Number.

This number corresponds with the individual parts index number in that figure.

A small "x" indicates the inability to show that particular part in the Photo or Illustration.

12-115x

Schematic Diagram Number of individual manufactured part.
(not required for parts order)

Ref. No.	Parts No.	Description	Schematic No.
		FLYWHEEL BLOCK #13	
12-115x	800425	Flywheel Block Assy. Comp.	RDG #13
12-116	244506	Flywheel Only	RD-233
12-117x	244754	Felt, Flywheel	RD-275
12-118	251324	Main Metal Case	RD-236
12-119	253080	Main Metal	RD-237

4. The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of Components of the Schematic Diagram or Service Manual.
5. Please utilize separate "Common List for Service Parts" for Resistor Parts orders.
6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts Table of P.C. Board.
7. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List.
   It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index. (meaning of ref. no. outlined in Item 3 above).
8. Utilize separate "Price List for Parts" to determine unit price. The most simple method of finding parts Price is to utilize the reference number.

CAUTION:
1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Service Manual (Basic Parts List) may be partially changed, please use this parts list for all future reference.

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

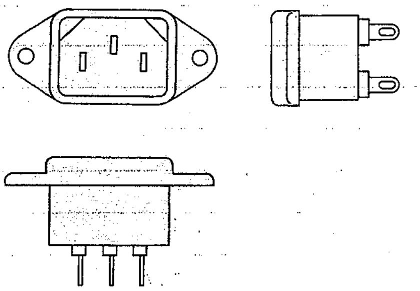
AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

AC INLET SYSTEM

This model is equipped with an AC INLET SYSTEM. Please refer to the AC INLET SYSTEM CHART below for the specific type. By the AC INLET SYSTEM, AC (mains) cord can be connected to and disconnected from the model because the model is provided with socket exclusively for AC (mains) cord on its main body.
Please note, however, that certain models are not equipped with this system and has a built-in AC (mains) cord as before.

AC INLET SYSTEM CHART

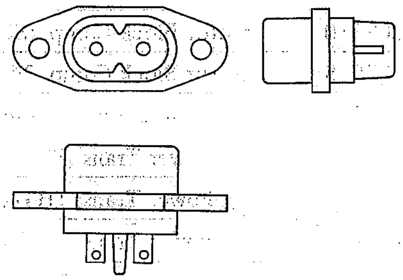
CLASS I

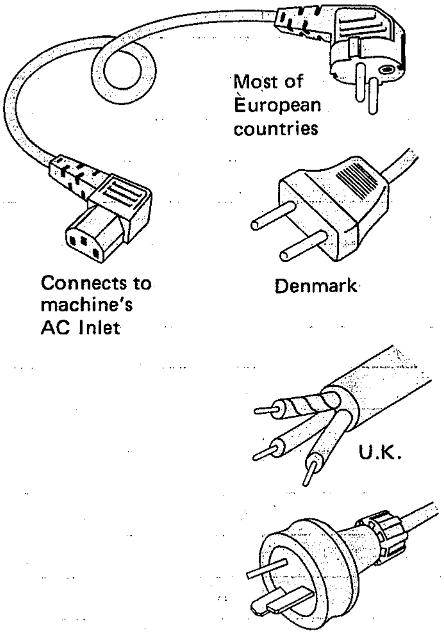


Picture 1
AC INLET
to be
installed
on machines

CLASS II

⧈ This mark indicating double insulation will be attached to machine's rear panel




Most of
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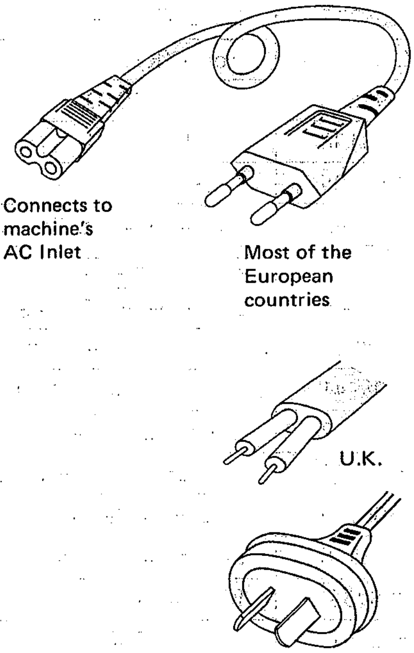
countries
Connects to
machine's
AC Inlet
Denmark
U.K.

Australia
differs according
to wall socket

Picture 2
AC (mains)
cord


Connects to
machine's
AC Inlet
Most of the
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countries
U.K.

Australia
differs according
to wall socket

Parts List for AC (mains) Cord Set

Standard		Description	Type of AC Inlet	Parts No.
Class I	CEE	Cord Set CEE (3 cores)	3P	EW302993
	BEAB	Cord Set BEAB (3 cores)	3P	EW302994
	SAA	Cord Set SAA (3 cores)	3P	EW302996
	U/T	Cord Set U/T (3 cores)	3P	EW302646
Class II	CEE	Cord Set CEE (2 cores)	2P	EW638144
	BEAB	Cord Set BEAB (2 cores)	2P	EW302995
	SAA	Cord Set SAA (2 cores)	2P	EW302991
	U/T	Cord Set U/T (2 cores)	2P	EW302899

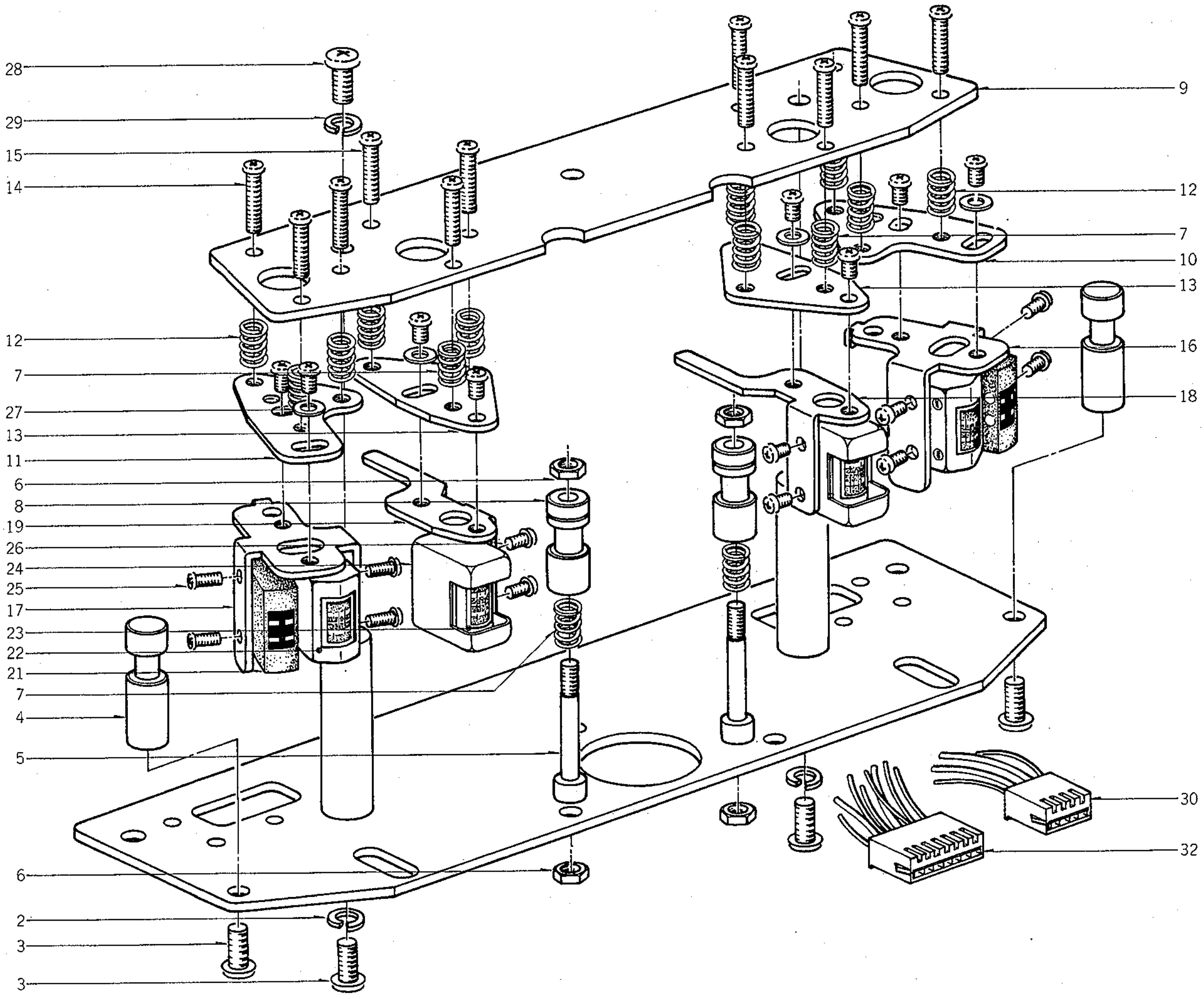
1. RECOMMENDED SPARE PARTS LIST

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

Parts No.	Description	Note
BA308262	Sys. Con P.C Board Comp. GX-635D (U/T) (JPN)	
BA308263	Sys. Con P.C Board Comp. GX-635D (CSA) (AAL)	
BA308264	Sys. Con P.C Board Comp. GX-635D (CEE) (UK)	
BA308275	Pre Amp P.C Board Comp. GX-635D (U/T) (JPN, CSA, AAL)	
BA308296	Pre Amp P.C Board Comp. GX-635D (CEE) (UK)	
BH308277	Head Block Comp. GX-635D	
BM308310	Motor Block Comp. (SCM-200) GX-635D	
BM587518	Motor Block Comp. 24XO-TD TE	
BR587553	Reel Table Block Comp. TE (Take-up)	
BT308918	⚠ Power Trans. THT-1	U/T
BT308919	⚠ Power Trans. THT-2	JPN
BT308921	⚠ Power Trans. THT-4	CSA, AAL
BT308920	⚠ Power Trans. THT-3	CEE, UK
BZ308227	Roller (L) Block Comp. GX-635D	
BZ308228	Roller (R) Block Comp. GX-635D	
ED698826	LED SR-105D	
ED283138	LED GL-3PG1	
ED303005	LED GL-3PY1	
ED308945	Silicon Diode SVB10-100	
ED313623	Zener Diode HZ22-3	
ED309069	Zener Diode HZ6B-2	
ED308951	Zener Diode WZ-120	
ED308941	Silicon Diode SVB10-200	
ED308952	Germanium Diode (Stop. Type) 1K34A-LR	
ED308953	Germanium Diode (Home. Type) 1K34A-LH	
ED306109	Silicon Diode W03B	
ED224550	Silicon Diode 10D4	
EI308936	IC M54410P	IC1
EI430661	IC M53200P	IC2, 3
EI633960	IC M53202P	IC4
EI573840	IC M53204P	IC5
EI306141	IC LA4170	IC1
EM309051	VU Meter VU-50-003	U/T, CSA, AAL, CEE, UK
EM309050	VU Meter VU-50-005	JPN
EP309056	Plunger TDS-07A	
EP310448	Plunger 1664TLT	
EP310447	Plunger 1240TLT	
EP309061	Relay FRL-264	
EP308949	Relay BR211	
EP308973	Relay LAB2NS	

Parts No.	Description	Note
ES313792	⚠ Slide SW. TSS012183	CEE, UK
ES308914	Push SW. SUF12	
ES308913	Rotary SW. SRU1023S	
ES308925	Push SW. SUF12	
ES313622	⚠ Push SW. JP-27 (w/o lavel)	U/T, JPN
ES309059	⚠ Push SW. JP-27	CSA, AAL
ES309058	⚠ Push SW. JP-24	CEE, UK
ES309094	Slide SW. SL13-6-6-2-2-B	
ES301435	Slide SW. CL-210E	
ES308984	Push SW. SUF44	
ES308983	Push SW. J-K2023	
ES301436	Slide SW. CL-206E	
ES301715	Slide SW. SSB02214	
ES306292	Leaf SW. BSW-86	
ET312497	Transistor 2SC1061 (B) (C) YC-408	
ET307349	Transistor 2SD794 (P) (Q)	
ET308947	Transistor 2SC2336B (Q) (R)	
ET308937	Transistor 2SC2130 (G) (H)	
ET522268	Transistor 2SA7339 (Q)	
ET399846	Transistor 2SC945L (Q)	
ET352146	Transistor 2SC458LG (D)	
ET308978	FET 2SK68 (M)	
ET311336	Transistor 2SC2130 (H)	
EV308917	Vol. VM10E 1 kB	
EV302718	Semi-fixed/Vol. V18K3-6 (4US) 50 kB	
EV309071	Semi-fixed/Vol. V18K3-6 (4US) 20 kB	
EV305637	Semi-fixed/Vol. D8 Axial Type 10 kB	
EV305636	Semi-fixed/Vol. D8 Axial Type 50 kB	
EV306989	Semi-fixed/Vol. D8 Axial Type 1 kB	
EV301437	Single Axial 2 Throw Vol. GM70R-715 10 kB×2	
EV308966	Semi-fixed/Vol. D8 Axial Type 30 kB	
EV308995	Double Axial 2 Throw Vol. DM20R 50 kA×2	
HE308149	ERASE HEAD E4-241	
HP308146	PB HEAD P4-241	
HR308148	REC HEAD R4-241	
MB308701	Counter Belt	
MP424023	Pinch Roller KD D=37	

2. ILLUSTRATION OF HEAD BLOCK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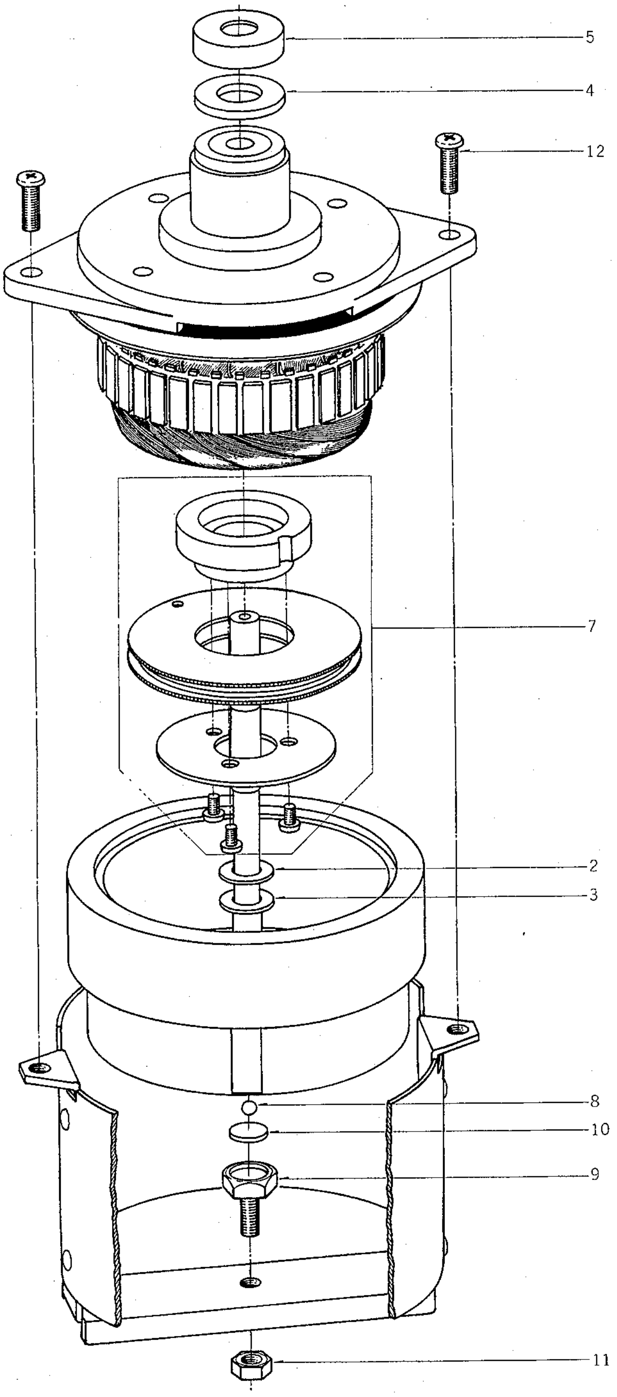
2) HEAD BLOCK

Ref. No.	Parts No.	Description	Schematic No.
2-1x	BH308277	Head Block Comp. GX-635D	
2-2	ZW273914	Spring Washer, M4	
2-3	ZS413201	Screw, pan head 4x8	
2-4	HZ528581	Tape Guide (A)	ND-0006
2-5	MH578957	Tape Guide Prop	TD-0003
2-6	ZW265522	M3 Nut, #2	
2-7	ZG466312	Angle Adjust Spring (E)	BS-0018
2-8	HZ301777	Tape Guide (C)	NE-0212
2-9	HB308681	Head Sub Chassis	TH-0002
2-10	HB309407	ER Head Base (A)	TH-0007
2-11	HB309408	ER Head Base (B)	TH-0007
2-12	ZG303300	Angle Adjust Spring (B)	RD-55
2-13	HB308685	PB Head Base	TH-0005
2-14	ZS608501	Screw, pan head 3x12	
2-15	ZS417407	Screw, pan head 3x10	
2-16	HA309409	ER Head Angle (A)	TH-0008
2-17	HA309410	ER Head Angle (B)	TH-0008
2-18	HA308686	PB Head Angle (A)	TH-0006
2-19	HA308687	PB Head Angle (B)	TH-0006
2-20x	HZ309411	P.C Board Terminal Plate	TH-0009
2-21	HE308149	ERASE HEAD E4-241	
2-22	HR308148	REC HEAD R4-241	
2-23	HP308146	PB HEAD P4-241	
2-24	HZ301366	Head Shield	NE-0211
2-25	ZS460440	Screw, pan head 2x4	
2-26	ZS608095	Screw, pan head 2x5	
2-27	ZW309055	Washer D3x6x0.5t (Black)	
2-28	ZS201778	Screw, pan head 4x8	
2-29	ZW668621	M4 Spring Washer (Black)	
2-30	EJ310390	4P Micro Connector W-H8004-020	26-6-306
2-31x	EJ310391	4P Micro Connector W-H8004-021	26-6-307
2-32	EJ310392	7P Micro Connector W-H8004-016	26-6-308
2-33x	EJ310446	7P Micro Connector W-H8004-017	26-6-309

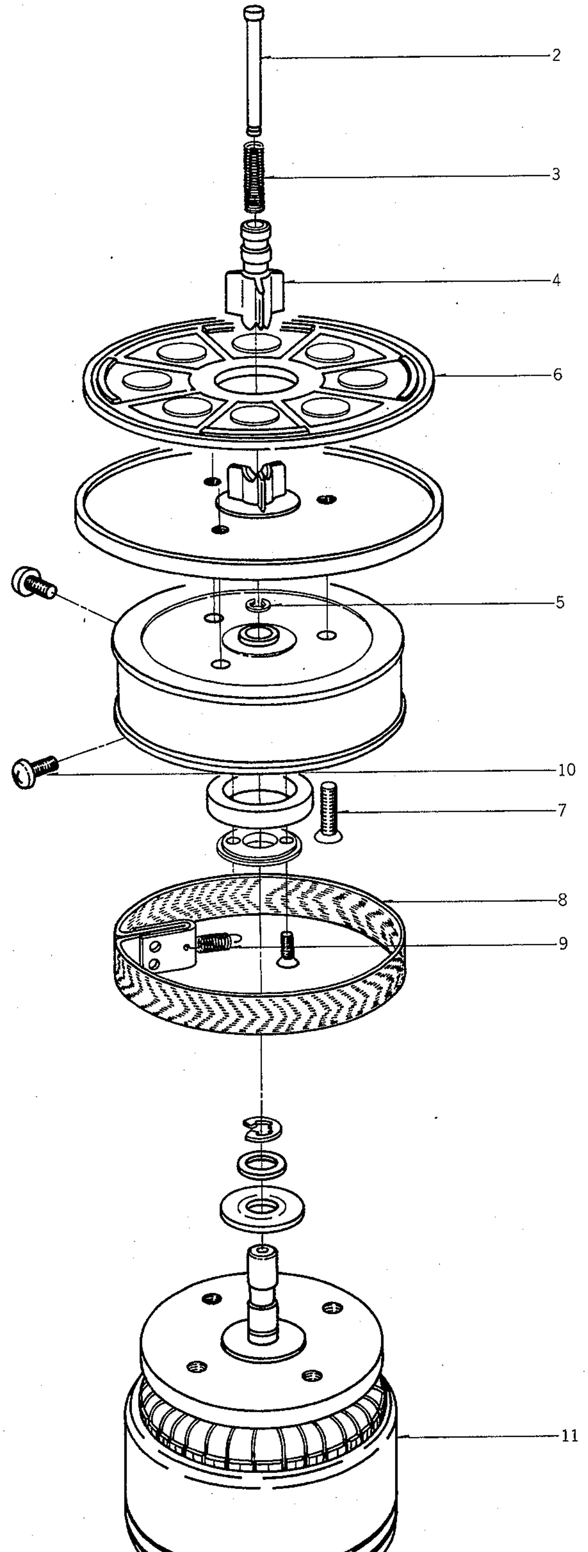
3. ILLUSTRATION OF MOTOR (SCM-200) BLOCK



3) MOTOR (SCM-200) BLOCK

Ref. No.	Parts No.	Description	Schematic No.
3-1x	BM308310	Motor Block Comp. (SCM-200) GX-635D	
3-2	ZW597543	Thrust Washer	KJ-7009
3-3	ZW605698	Thrust Washer (B)	KJ-7009
3-4	ZW597622	Felt Washer	KJ-7022
3-5	SK597633	Cap	KJ-7023
3-6x	ZS608308	Screw, pan head 3x18, w/washer	
3-7	BZ308315	Detection Gear Assy GX-635D	
3-8	MV368886	Steel Ball D3	
3-9	MZ585900	Shaft Support	LS-1203
3-10	MZ597690	Ball Holder	KJ-7029
3-11	ZW413278	Nut M5, #1	
3-12	ZS413201	Screw, pan head 4x8	

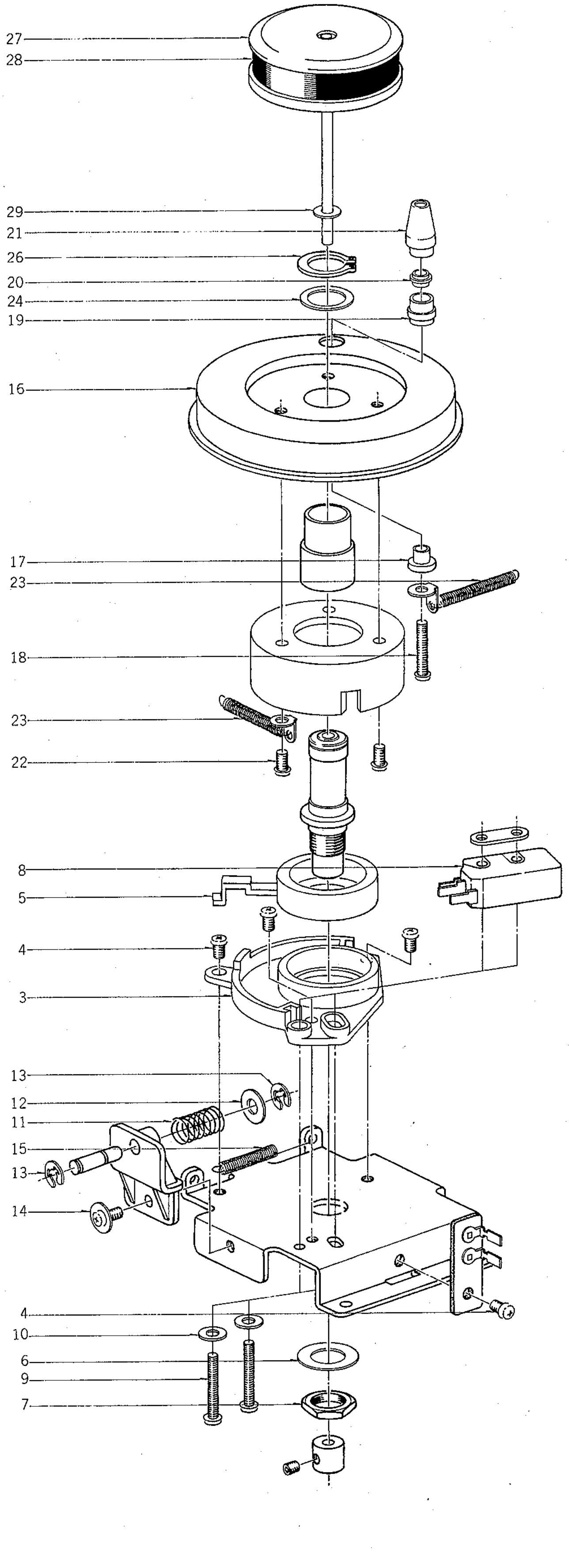
4. ILLUSTRATION OF REEL TABLE BLOCK



4) REEL TABLE BLOCK

Ref. No.	Parts No.	Description	Schematic No.
4-1x	BR587553	Reel Table Block Comp. TE (Take-up)	
4-2	MS342000	Reel Shaft	3R-108
4-3	ZG540617	Clamper Spring	TW-2096
4-4	MT534677	Reel Clamper	TW-2032
4-5	ZW270088	'E' Ring 1.9M	6-1-9
4-6	MT534688	Reel Table Rubber	TW-2033
4-7	ZS419670	Screw, pan head 3x12	
4-8	MT436860	Brake Cloth Comp. MR	MR-269
4-9	ZG317496	Felt Tension Spring	MR-260
4-10	ZS424056	Screw, pan head 4x10	
	MOTOR BLOCK		
4-11	BM587518	Motor Block Comp. 24XO-TD TE	

5. ILLUSTRATION OF ROLLER BLOCK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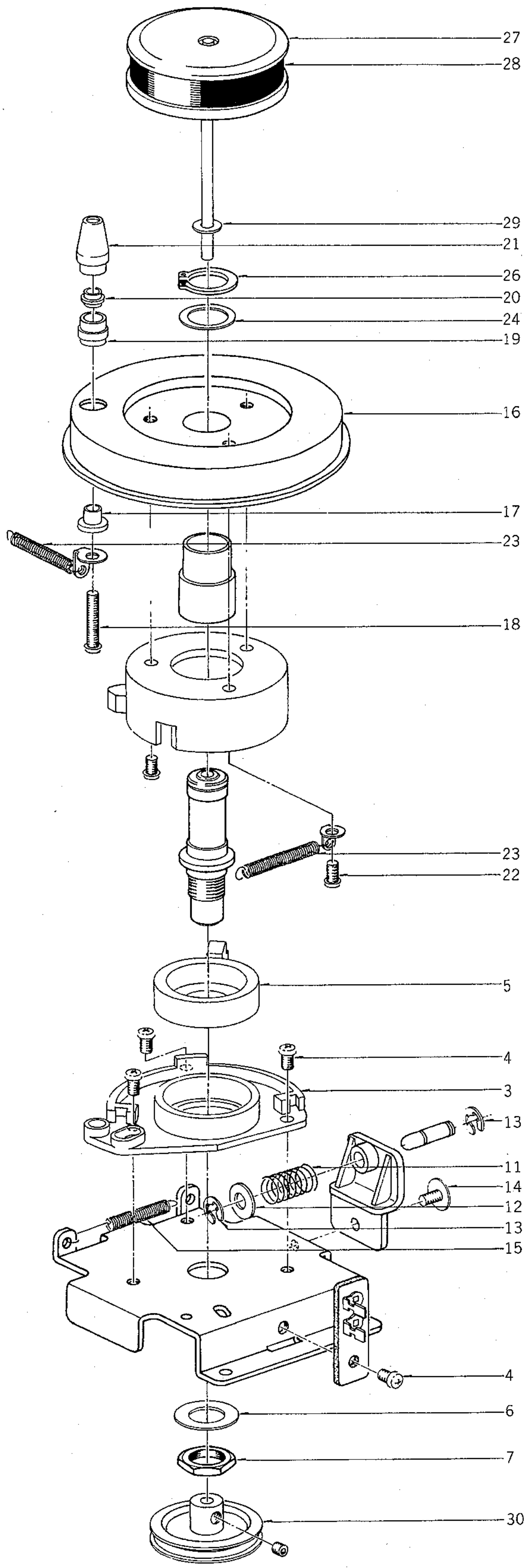
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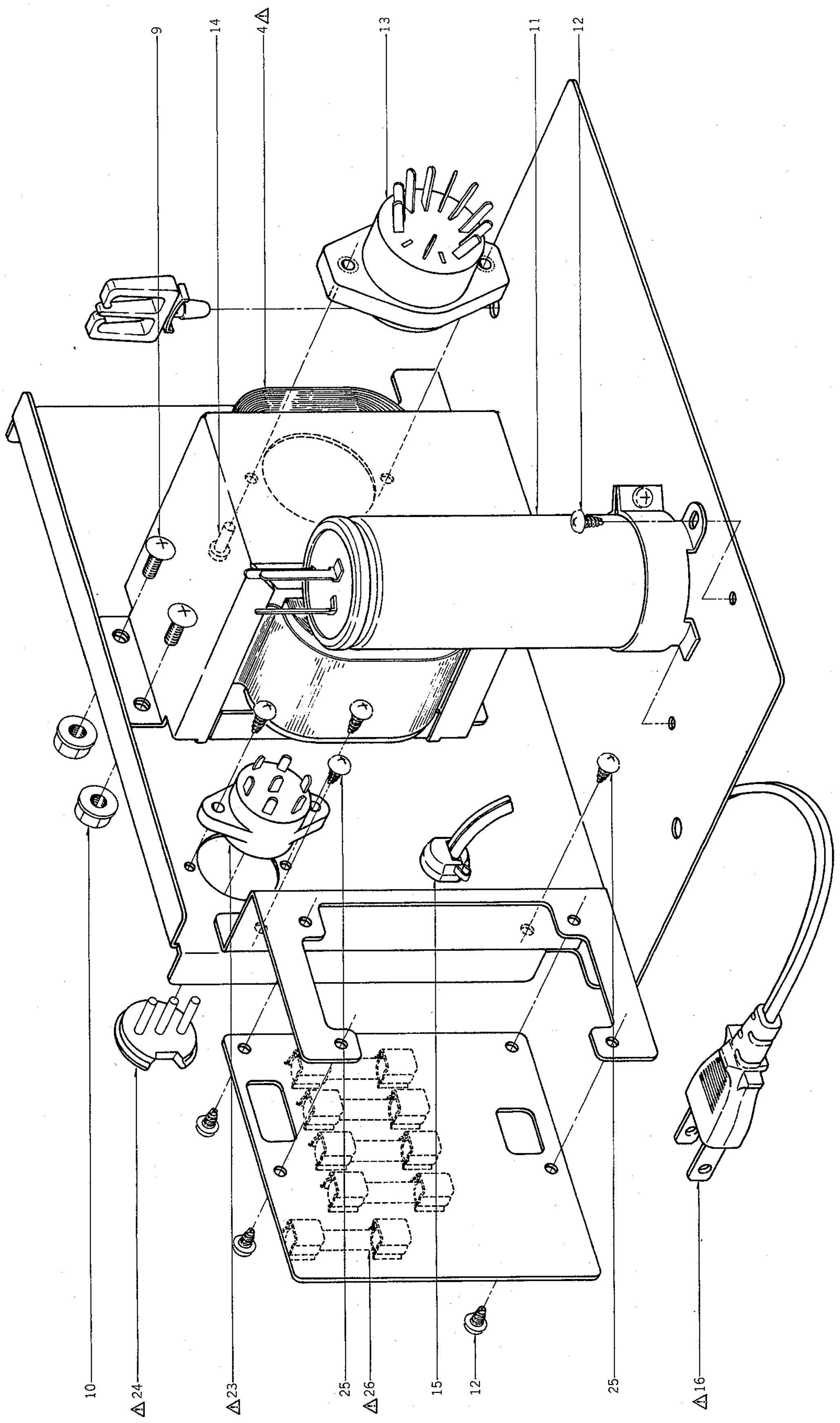
5) ROLLER BLOCK

Ref. No.	Parts No.	Description	Schematic No.
5-1x	BZ308227	Roller (L) Block Comp. GX-635D	
5-2x	BZ308228	Roller (R) Block Comp. GX-635D	
5-3	SZ308717	Arm Damper Base	TH-2013
5-4	ZS417216	Screw, pan head 3x4	
5-5	SZ308718	Arm Damper	TH-2014
5-6	EW308922	Washer D9.2x15x0.5t (ALP)	
5-7	ZW302896	Nut D9x11x2t (P=0.75)	
5-8	ES308929	Micro SW. VV-S	25-1-55
5-9	ZS308931	Screw, 2.6x18 (Pan)	
5-10	ZW550697	Washer (SPC) D2.9x7.4x0.5t	
5-11	ZG308722	Lock Spring	TH-2018
5-12	ZW308930	Washer D4.2x9x0.25t (PBP)	
5-13	ZW270101	'E' Ring 3M	6-1-9
5-14	ZS608321	Screw, pan head 3x6, W=8	
5-15	ZG567685	Azimuth Spring (1)	CP-0040
5-16	MI308707	Tension Wheel	TH-2004
5-17	EZ308712	Insu. Bush	TH-2008
5-18	ZS422965	Screw, pan head 3x15	
5-19	HZ308710	Tape Guide (B)	TH-2007
5-20	MZ535072	Insulator Bush (A)	TW-2075
5-21	HZ308709	Tape Guide (A)	TH-2006
5-22	ZS479474	Screw, pan head 2.6x5	
5-23	ZG312399	Spring T1-3.2/0.2-31.5	
5-24	ZW308927	Washer D10.2x14x0.5t (Nylon)	
5-25x	ZW313822	Washer D10.2x14x0.13t (Polyslider)	
5-26	ZW307294	'C' Ring STW-10-C-3	6-1-3
5-27	MR308713	Counter Roller	TH-2009
5-28	MB308714	Roller Belt	TH-2010
5-29	ZW308928	Washer D2.4x7x0.2t (Teflon)	
5-30	MR308715	Roller Pulley (only R)	TH-2011

6. ILLUSTRATION OF POWER SUPPLY BLOCK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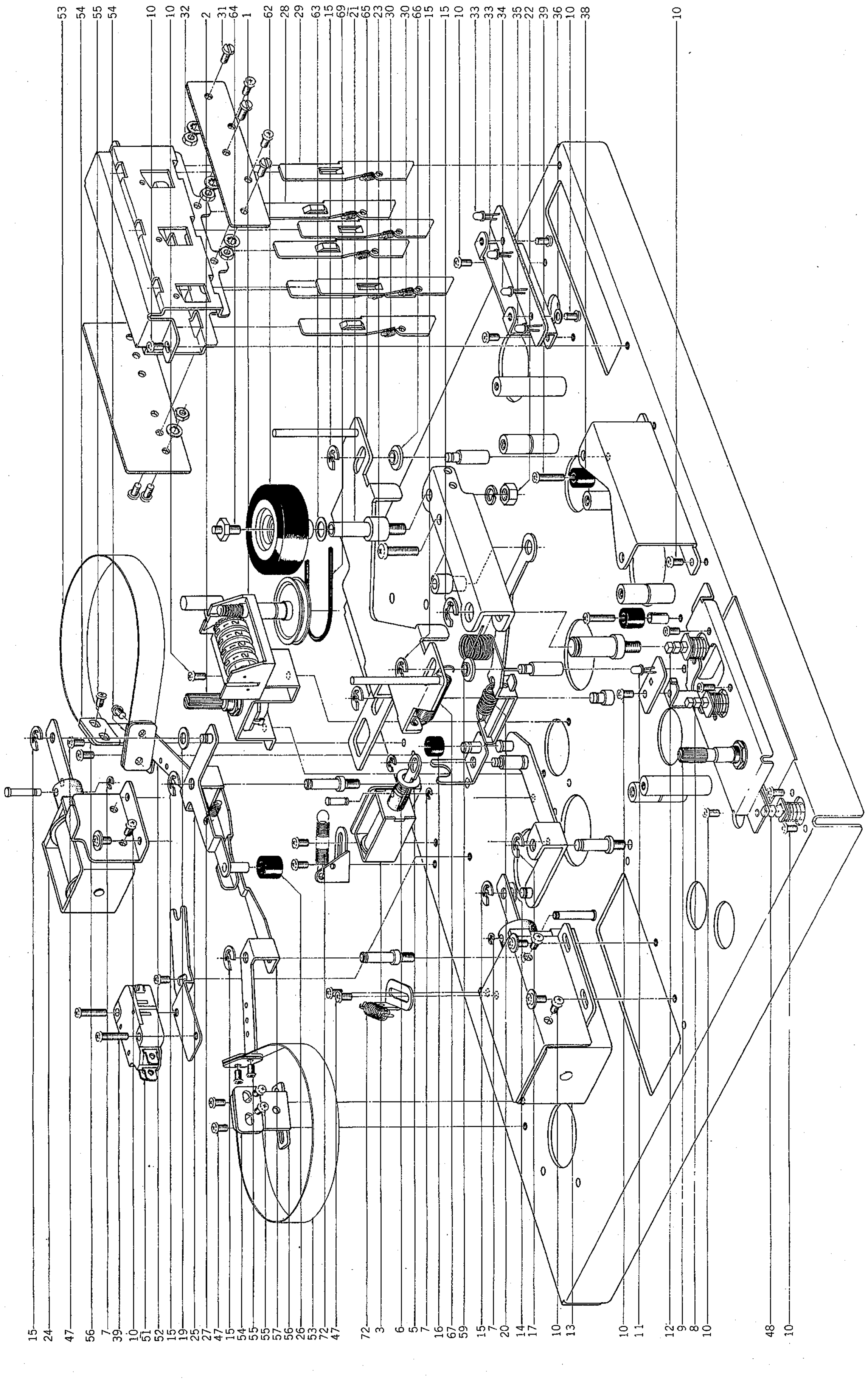
6) POWER SUPPLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.
	FUSE P.C BOARD BLOCK		
6-1x	EC551160	⚠ Ceramic/C. DB821 NA 0.01μF (Z) 1.4 kWV (U/T, JPN)	24-5-55
6-2x	EC294118	⚠ Ceramic/C. DPN6600 YM 0.01μF (P) 125WV (CSA, AAL)	24-5-70
6-3x	EC301320	⚠ MP/C. 4700PF (M) 250WV (CEE, UK)	24-9-122
	POWER SUPPLY P.C BOARD		
6-4	BT308918	⚠ Power Trans. THT-1 (U/T)	38-4-667
6-5x	BT308919	⚠ Power Trans. THT-2 (JPN)	38-4-668
6-6x	BT308921	⚠ Power Trans. THT-4 (CSA, AAL)	38-4-670
6-7x	BT308920	⚠ Power Trans. THT-3 (CEE, UK)	38-4-669
6-8x	ZW308916	Washer D4.5x10x1t	
6-9	ZS435273	Screw, binding head 4x10	
6-10	ZW413267	Flange Nut M4	
6-11	EC249592	MP/C. 4+4μF 250WV	24-9-116
6-12	ZS325495	Tapping Screw #2, 3x6 (BR)	
6-13	EJ307274	9P Remo. Con Socket	31-1-223
6-14	ZS421740	Screw, pan head 3x8 (Black)	
6-15	EZ631945	Strain Relief SR-4N-4 (U/T, JPN, CSA, AAL)	2-7-49
6-16	EW306428	⚠ AC Cord (U/T)	26-3-64
6-17x	EW306427	⚠ AC Cord (JPN)	26-3-63
6-18x	EW305691	⚠ AC Cord CUL (CSA, AAL)	26-3-65
6-19x	EJ301513	⚠ 2P Inlet (CEE, UK)	31-1-200
6-20x	ES313792	⚠ Slide SW. TSS012183 (CEE, UK)	25-3-148
6-21x	ZS447761	Tapping Screw #2, 3x6(BR) (Black) (CEE, UK)	
6-22x	ZS422076	Screw, pan head 3x5 (CEE, UK)	
6-23	EJ262732	⚠ Socket (Volt. Selector) (U/T)	31-1-190
6-24	EJ249467	⚠ Voltage Selector (U/T)	42-1-109
6-25	ZS463353	Tapping Screw #2, 3x8(BR) (Black) (U/T)	
6-26	EF563681	⚠ Fuse 1A 250V (U/T)	39-1-50
6-27x	EF563703	⚠ Fuse 2A 250V (U/T, JPN)	39-1-50
6-28x	EF616555	⚠ Fuse 1.6A 250V (U/T, JPN)	39-1-50
6-29x	EF575932	⚠ Fuse 0.8A 250V (U/T, JPN)	39-1-50
6-30x	EF659698	⚠ Fuse SS-2 2A 250V (CSA, AAL)	39-1-56
6-31x	EF308923	⚠ Fuse SS-2 1.6A (CSA, AAL)	39-1-56
6-32x	EF683313	⚠ Fuse SS-2 0.8A 250V (CSA, AAL)	39-1-56
6-33x	EF593706	⚠ Fuse (SEMKO T Type) 500mAT (CEE, UK)	39-1-53
6-34x	EF623103	⚠ Fuse (SEMKO T Type) 1AT (CEE, UK)	39-1-53

7. ILLUSTRATION OF MECHA ASSEMBLY BLOCK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7) MECHA ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.
	COUNTER BLOCK		
7-1	MC308242	Counter Part MP499-07	9-1-67
7-2	EV308917	Vol. VM10E 1 kB	36-6-34
	PAUSE PLUNGER BLOCK		
7-3	EP309056	Plunger TDS-07A	44-1-105
7-4x	ZS592378	Screw, pan head 2.6x3	
7-5	ZW313593	Washer (PBP) D5.1x10.3x0.5t	
7-6	ZG308734	Joint Spring	TH-2031
7-7	ZW270088	'E' Ring 1.9M	6-1-9
	SW. BLOCK		
7-8	ES308914	Push SW. SUF12	25-5-301
7-9	ES308913	Rotary SW. SRU1023S	25-6-161
7-10	ZS422076	Screw, pan head 3x5	
7-11	ED698826	LED SR-105D	45-15-16
7-12	ES308925	Push SW. SUF12	25-5-304
	PR PLUNGER BLOCK		
7-13	EP310448	Plunger 1664TLT	44-1-106
7-14	ZW678723	Washer D6.2x13x0.2t (Teflon)	
7-15	ZW290283	'U' Ring, 2.85M	6-1-1
7-16	MB428343	Stopper Rubber, KD	KD-1088
7-17	ZW270123	'E' Ring, 4M	6-1-9
7-18x	ZW260076	Washer (Nylon) D6.1x10x0.5t	
7-19	ZW420682	Washer (Nylon) D4.2x9x0.5t	
7-20	ZG308728	P Spring	TH-2025
7-21	MS527591	Pinch Roller Shaft	ND-1030
7-22	ZW413278	Nut M5, #1	
7-23	ZS444262	Screw, binding head 4x18	
	BRAKE PLUNGER BLOCK		
7-24	EP310447	Plunger 1240TLT	44-1-107
7-25	ML308905	Brake Lever Part GX-635D	TH-2027
7-26	MZ397181	Lever Cushion	KD-1069
7-27	ZG580522	Clutch Lever Spring	TD-2045
	OPERATION BLOCK		
7-28	ML308737	Operation Plate (A)	TH-2034
7-29	ML308677	Operation Plate (B)	TH-2034
7-30	ZG576314	FF Idler Spring	PW-2030
	OPERATION P.C BOARD (A) BLOCK		
7-31	ZS302720	Screw, flat head 3x6 (Black)	
7-32	ZW273756	Nut M3, #1	
	LED P.C BOARD BLOCK		
7-33	ED283138	LED GL-3PG1	45-15-15
7-34	ED303005	LED GL-3PY1	45-15-18
7-35	ED698826	LED SR-105D	45-15-16
7-36	ZW309054	Washer D3x6x0.2t (Nylon)	
	MECHA ASSEMBLY BLOCK		
7-37x	ZS413201	Screw, pan head 4x8	
7-38	MB606712	Stopper Rubber KJ	KJ-2060
7-39	ZS419670	Screw, pan head 3x12	
7-40x	ZW273914	Spring Washer, M4	
7-41x	ZW413188	Nut M4, #1	
7-42x	ZW274026	Spring Washer, M5	
7-43x	ZW413278	Nut M5, #1	
7-44x	ZS325495	Tapping Screw #2, 3x6 (BR)	
7-45x	SA312529	Rubber Foot (A-2) Part	LE-6739
7-46x	ZS417150	Screw, pan head 4x6	
7-47	ZS323728	Screw, binding head 3x5	
7-48	ES313622	⚠ Push SW. JP-27 (w/o label) (U/T, JPN)	25-5-318
7-49x	ES309059	⚠ Push SW. JP-27 (CSA, AAL)	25-5-285
7-50x	ES309058	⚠ Push SW. JP-24 (CEE, UK)	25-5-286
7-51	ES573478	Micro SW. K-3	25-1-31
7-52	ML582041	Brake Lever (A)	TD-1019
7-53	MT314987	Brake Band	MR-213
7-54	MZ314998	Brake Retaining Plate	MR-212
7-55	ZS417216	Screw, pan head 3x4	
7-56	ML582074	Brake Band Support	TD-1023
7-57	ML533643	Brake Lever (B)	TW-1030
7-58x	ZS608321	Screw, pan head 3x6, W=8	
7-59	ZG301340	Pinch Roller Spring	NE-2237
7-60x	ZW270156	'E' Ring 6M	6-1-9
7-61x	ZW270101	'E' Ring 3M	6-1-9
7-62	MP424023	Pinch Roller KD D=37	KD-1084
7-63	ZW376391	Washer (Polyslider) D6.1x10x0.13t	
7-64	ZS527681	Pinch Roller Set Screw	ND-6019
7-65	ML308904	Shifter Slide Part	TH-1012
7-66	ZW580173	Guide Washer	TD-1055
7-67	ZG313099	Coil Spring T1-8.0/0.5-31.5	
7-68x	ZS309096	Screw, 3x6 (Pan) w/Plug	
7-69	MB308701	Counter Belt	TH-1014
7-70x	ZW330412	Adjust. Washer (U) D4x13x0.13t	
7-71x	ZW330423	Adjust. Washer (U) D4x13x0.25t	
7-72	ZG672478	Brake Spring	TE-1017

When ordering parts, Please describe Parts Number, Description, and Model Number in detail.

8. P.C BOARDS

(1) SYS. CON P.C BOARD (TH-1015) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
(1)-1	BA308262	Sys. Con P.C Board Comp. GX-635D (U/T) (JPN)	
(1)-2	BA308263	Sys. Con P.C Board Comp. GX-635D (CSA) (AAL)	
(1)-3	BA308264	Sys. Con P.C Board Comp. GX-635D (CEE) (UK)	
(1)-IC1	EI308936	IC M54410P	45-8-304
(1)-IC2,3	EI430661	IC M53200P	45-8-38
(1)-IC4	EI633960	IC M53202P	45-8-140
(1)-IC5	EI573840	IC M53204P	45-8-106
(1)-TR1	ET312497	Transistor 2SC1061(B)(C) YC-408	45-1-96
(1)-TR2	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR3	ET307349	Transistor 2SD794(P)(Q)	45-1-334
(1)-TR4to8	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR9,10	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(1)-TR11	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR12	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(1)-TR13	ET308947	Transistor 2SC2336B(Q)(R)	45-1-333
(1)-TR14,15	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR16to19	ET308937	Transistor 2SC2130(G)(H)	45-1-317
(1)-TR20	ET522268	Transistor 2SA733(Q)	45-1-124
(1)-TR21	ET399846	Transistor 2SC945L(Q)	45-1-85
(1)-TR22	ET308937	Transistor 2SC2130(G)(H)	45-1-317
(1)-TR23	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR24,25	ET308937	Transistor 2SC2130(G)(H)	45-1-317
(1)-TR26to32	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-D1	ED308945	Silicon Diode SVB10-100	45-2-82
(1)-D2	ED313623	Zener Diode HZ22-3	45-6-80
(1)-D3	ED308945	Silicon Diode SVB10-100	45-2-82
(1)-D4	ED309069	Zener Diode HZ6B-2	45-6-80
(1)-D5	ED308951	Zener Diode WZ-120	45-6-67
(1)-D6	ED510772	Zener Diode WZ-120	45-6-67
(1)-D7,8	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D9	ED308941	Silicon Diode SVB10-200	45-2-82
(1)-D10,11	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(1)-D12,13	ED308953	Germanium Diode (Home. Type) 1K34A-LH	45-3-46
(1)-D14	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(1)-D15	ED624903	Silicon Diode 1S2473	45-3-28
(1)-D16	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D17	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(1)-D18	ED624903	Silicon Diode 1S2473	45-3-28
(1)-D19to22	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D24	ED624903	Silicon Diode 1S2473	45-3-28
(1)-D26	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D27	ED624903	Silicon Diode 1S2473	45-3-28
(1)-D28	ED308953	Germanium Diode (Home. Type) 1K34A-LH	45-3-46
(1)-D29to32	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D33,34	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(1)-D35	ED624903	Silicon Diode 1S2473	45-3-28
(1)-D36to38	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(1)-D39,40	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D41,42	ED308953	Germanium Diode (Home. Type) 1K34A-LH	45-3-46
(1)-D43	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D44	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(1)-D45	ED308953	Germanium Diode (Home. Type) 1K34A-LH	45-3-46
(1)-D46	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(1)-D47,48	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D49	ED306109	Silicon Diode W03B	45-2-78
(1)-D50	ED308941	Silicon Diode SVB10-200	45-2-82
(1)-D51,52	ED224550	Silicon Diode 10D4	45-2-16
(1)-D53	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D54	ED224550	Silicon Diode 10D4	45-2-16
(1)-D55	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D56	ED224550	Silicon Diode 10D4	45-2-16
(1)-D57	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-RL1to4	EP309061	Relay FRL-264	47-1-37
(1)-RL5	EP308949	Relay BR211	47-2-31
(1)-RL6	EP280743	Relay BR111CD024D	47-1-31
(1)-SW1	ES309094	Slide SW. SL13-6-6-2-2-B	25-3-159
(1)-VR1	EV302718	Semi-fixed/Vol. V18K3-6 (4US) 50 kB	36-9-26
(1)-VR2	EV309071	Semi-fixed/Vol. V18K3-6 (4US) 20 kB	36-9-26
(1)-CR1to14	ER300820	Spark Quencher CRU-112 0.1μ+120 ohms 125WV (U/T, JPN, CSA, AAL)	41-1-63
(1)-R110	ER309092	Metal Oxide Film/R. 2W 820 ohms(K)	35-15-8
(1)-R111	ER308956	Cement/R. (Home. Type) 20W 220 ohms(K)	35-16-81
(1)-R112	ER308955	Cement/R. (Home. Type) 20W 36 ohms(K)	35-16-81
(1)-C1	EC295997	Elect./C. (Vert. Type) 2200μF 35WV	24-12-9
(1)-C4	EC450270	Elect./C. (Vert. Type) 1000μF 25WV	24-12-9
(1)-C5	EC459145	Elect./C. (Vert. Type) 2200μF 16WV	24-12-9
(1)-C7	EC220410	Elect./C. (Vert. Type) 1000μF 10WV	24-12-9
(1)-C19	EC310370	Metalized Film/C. (Vert. Type) 1.5μF(K) 180WV	24-16-12
(1)-C20	EC310368	Metalized Film/C. (Vert. Type) 3.5μF(K) 180WV	24-16-13
(1)-C35to37	EC304708	Tantalum/C. (D Type) 47μF(M) 6.3WV	24-15-12
(1)-C39,40	EC304186	NP/C. (Vert. Type) 10μF(M) 16WV	24-17-26
(1)-C44,45	EC308940	NP/C. (Home. Type) 0.47μF(M) 50WV	24-17-31
(1)-C46,47	EC308950	Tantalum/C. 10μF(M) 6.3WV	24-15-12
(1)-C48	EC308943	Elect./C. 470μF 160WV	24-12-32
(1)-C49	EC313577	Elect./C. (Vert. Type) 100μF 100WV	24-12-46
(1)-C52	EC310366	Metalized Film/C. (Vert. Type) 0.47μF(M) 150WV	24-16-11
(1)-C53	EC310374	Tantalum/C. (D Type) 100μF(M) 3.15WV	24-15-12
(1)-C101to128	EC310372	Metalized Film/C. (Vert. Type) 0.1μF(M) 200WV (CEE, UK)	24-16-14
(1)-4	ZS421806	Screw, pan head 3×8	
(1)-5	ZW273756	Nut M3, #1	

(2) PRE AMP P.C BOARD (TH-5001A) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
(2)-1	BA308275	Pre Amp P.C Board Comp. GX-635D (U/T) (JPN, CSA, AAL)	
(2)-2	BA308296	Pre Amp P.C Board Comp. GX-635D (CEE) (UK)	
(2)-IC1	EI306141	IC LA4170	45-8-305
(2)-TR1to3	ET352146	Transistor 2SC458LG(D)	45-1-29
(2)-TR4	ET308975	Transistor 2SC458(D)	45-1-26
(2)-TR5,6	ET638504	Transistor 2SC945L(P)	45-1-85
(2)-TR7to9	ET352146	Transistor 2SC458LG(D)	45-1-29
(2)-TR10	ET638504	Transistor 2SC945L(P)	45-1-85
(2)-TR11	ET308978	FET 2SK68(M)	45-12-14
(2)-TR12	ET311336	Transistor 2SC2130(H)	45-1-317
(2)-TR13to15	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(2)-TR16	ET208012	Transistor 2SD571(K)	45-1-218
(2)-TR17to23	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(2)-D1,2	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(2)-D3	ED560913	Silicon Diode 1S2473 VE	45-3-23
(2)-D4	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(2)-D5to8	ED560913	Silicon Diode 1S2473 VE	45-3-23
(2)-L1	EO301448	Inductor 45H-044 1MH	23-1-277
(2)-L2	EO301467	Ferri Inductor RX-9P 3.3MH(J)	23-1-275
(2)-L3	EO308982	Inductor 22MH	23-1-300
(2)-L4	EO308974	OSC Coil 49H-364	23-4-50
(2)-L5,6	EO313608	Ferri Inductor FL9H 270μH(J)	23-1-314
(2)-J1	EJ305629	Headphone Jack JL3A	31-2-90
(2)-J2	EJ305739	Mic Jack JU2	31-2-89
(2)-J3	EJ308986	4P PIN Jack (U/T, JPN, CSA, AAL)	31-5-145
(2)-J3	EJ306985	4P PIN Jack (CEE, UK)	31-5-142
(2)-SW1	ES301435	Slide SW. CL-210E	25-3-136
(2)-SW2	ES308984	Push SW. SUF44	25-5-302
(2)-SW3	ES308983	Push SW. J-K2023	25-5-305
(2)-SW4	ES301436	Slide SW. CL-206E	25-3-135
(2)-SW5	ES301715	Slide SW. SSB02214	25-3-127
(2)-SW6	ES306292	Leaf SW. BSW-86	25-10-31
(2)-VR1,2	EV305637	Semi-fixed/Vol. D8 Axial Type 10 kB	36-10-273
(2)-VR3,4	EV305636	Semi-fixed/Vol. D8 Axial Type 50 kB	36-10-273
(2)-VR5	EV306989	Semi-fixed/Vol. D8 Axial Type 1 kB	36-10-273
(2)-VR6	EV301437	Single Axial 2 Throw Vol. GM70R-715 10 kBx2	36-22-28
(2)-VR7	EV308966	Semi-fixed/Vol. D8 Axial Type 30 kB	36-10-273
(2)-P1,2	EJ249333	Micro Connector 4P Plug W-P0504	42-1-104
(2)-P3,4	EJ249366	Micro Connector 7P Plug W-P0507	42-1-104
(2)-RL1	EP308973	Relay LAB2NS	47-2-30
(2)-R82	ER306299	Metal Oxide Film/R. (Homing Type) 2W 390 ohms(J)	35-11-22
(2)-TC1,2	EC558202	Trimmer/C. TM-80A 80PF	24-2-26
(2)-C1	EC313868	Elect./C. (LL, Homing) 10μF(M) 16WV	24-20-19
(2)-C3	EC305677	Styrol/C. 200PF(K) 50WV	24-11-14
(2)-C15	EC313624	Elect./C. (LL, Homing) 22μF(M) 25WV	24-20-19
(2)-C20	EC306420	Styrol/C. (Homing Type) 750PF(J) 50WV	24-11-14
(2)-C22	EC313868	Elect/C. (LL, Homing) 10μF(M) 16WV	24-20-19
(2)-C25	EC308990	Styrol/C. (Homing Type) 470PF(K) 50WV	24-11-14
(2)-C29	EC305677	Styrol/C. (Homing Type) 200PF(K) 50WV (R)	24-11-14
(2)-C29	EC516701	Styrol/C. (Vert. Type) 200PF(K) 50WV (L)	24-11-3
(2)-C30	EC306987	Styrol/C. (Homing Type) 470PF(J) 50WV (R)	24-11-14
(2)-C30	EC405898	Styrol/C. (Vert. Type) 470PF(J) 50WV (L)	24-11-3
(2)-C32	EC305677	Styrol/C. (Homing Type) 200PF(K) 50WV	24-11-14
(2)-C36	EC306438	Styrol/C. (Homing Type) 100PF(J) 50WV	24-11-14
(2)-C48	EC313265	Styrol/C. (Vert. Type) 150PF(J) 500WV	24-11-3

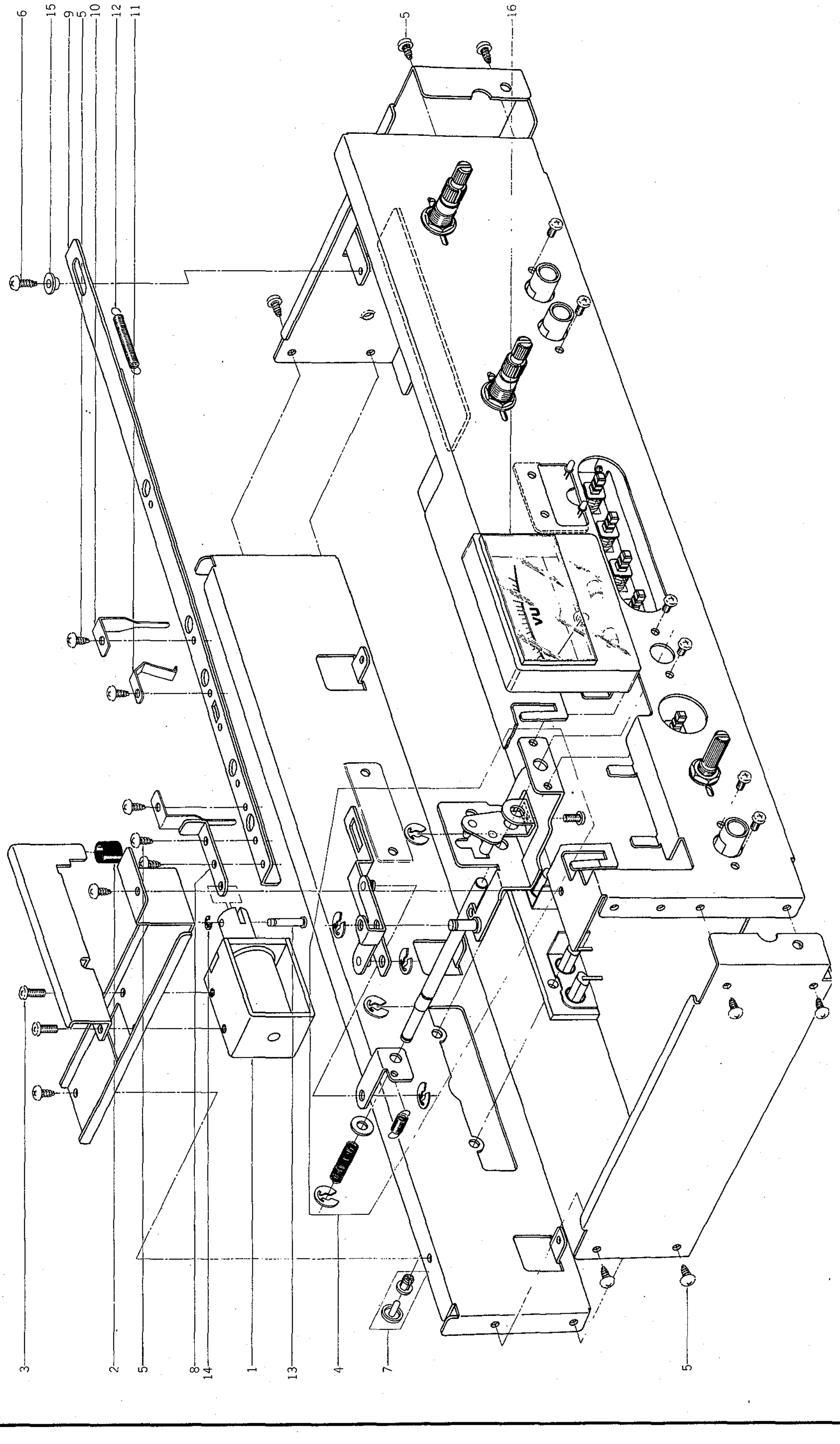
(3) VOL. P.C BOARD (TH-5002) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
(3)-VR1,2	EV308995	Double Axial 2 Throw Vol. DM20R 50 kAx2	36-18-9

(4) REC, LED P.C BOARD (TH-5001B) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
(4)-D1,2	ED249377	LED GL-3AR1	45-15-14

9. ILLUSTRATION OF AMP ASSEMBLY BLOCK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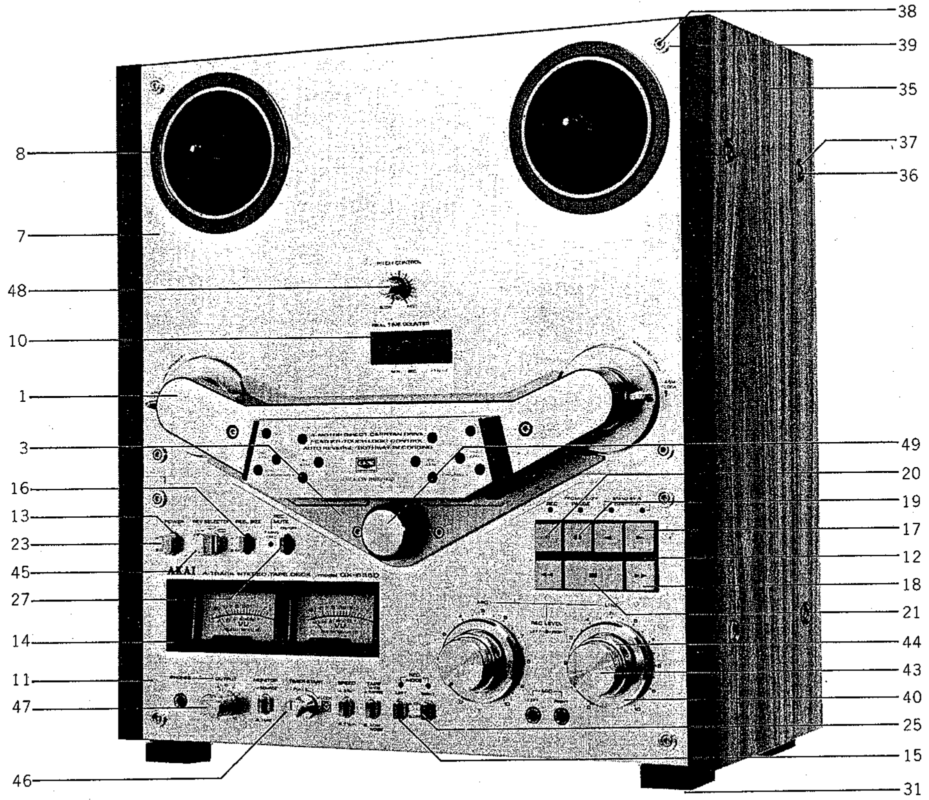
9) AMP ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.
		REVERSE PLUNGER BLOCK	
9-1	EP310447	Plunger 1240TLT	44-1-107
9-2	MB606712	Stopper Rubber KJ	KJ-2060
9-3	ZS422076	Screw, pan head 3x5	
		TIMER BLOCK	
9-4	BZ308285	Timer Block Comp. GX-635D	TH-2060
		AMP ASSEMBLY BLOCK	
9-5	ZS325495	Tapping Screw #2, 3x6 (BR)	
9-6	ZS447840	Tapping Screw #2, 3x8 (BR)	
9-7	ZW263946	Nylon Rivet 4x5	2-7-57
9-8	MZ301084	Reverse Joint	NE-5219
9-9	ML301123	Reverse Arm	NE-5218
9-10	ZG301072	Reverse SW. Spring (A)	NE-5206
9-11	ZG301073	Reverse SW. Spring (B)	NE-5207
9-12	ZG312400	Spring T1-4.0/0.4-31.5	
9-13	MH257477	Connecting Pin	RD-211
9-14	ZW270088	'E' Ring 1.9M	6-1-9
9-15	ZW625241	Graduated Washer	MY-1013
9-16	EM309051	VU Meter VU-50-003 (U/T, CSA, AAL, CEE, UK)	46-1-209
9-17x	EM309050	VU Meter VU-50-005 (JPN)	46-1-199

10. PHOTO OF FINAL ASSEMBLY BLOCK



10) FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.
		HEAD COVER BLOCK	
10-1	BZ308220	Head Cover Block Comp. GX-635D (U/T) (CSA, CEE, UK)	TH-6055
10-2x	BZ308219	Head Cover Block Comp. GX-635D (AAL)	TH-6055
		HEAD COVER BASE BLOCK COMP.	
10-3	SC308813	Head Cover Base	TH-6040
10-4x	ML308810	Head Cover Holder (A)	TH-6038
10-5x	ML308811	Head Cover Holder (B)	TH-6038
10-6x	ZS608321	Screw, pan head 3x6, w=8	
		MECHA PANEL BLOCK	
10-7	BD308215	Mecha Panel Block Comp. GX-635D	
10-8	SE301134	Reel Table Escutcheon (2-B)	TD-6021
10-9x	ZW575730	Speed Nut (P Type) (3)	6-3-6
10-10	SE308784	Counter Escutcheon	TH-6014
		AMP PANEL BLOCK	
10-11	BD308217	Amp Panel Block Comp. GX-635D	
10-12	SE308781	Operate Escutcheon	TH-6011
10-13	SE308786	Button Escutcheon	TH-6016
10-14	SE308780	Meter Escutcheon	TH-6010
10-15	SE306143	Button Escutcheon (A)	CN-6308
10-16	SE305651	Button Escutcheon (B)	CN-6352
10-17	SB308911	Operate Button (A) Part GX-635D	TH-6018
10-18	SB308910	Operate Button (B) Part GX-635D	TH-6020
10-19	SB308909	Operate Button (C) Part GX-635D	TH-6021
10-20	SB308908	Operate Button (D) Part GX-635D	TH-6022
10-21	SB308907	Operate Button (E) Part GX-635D	TH-6019
10-22x	SZ311866	Ring Felt	TH-6054
10-23	SB308785	Button (A)	TH-6015
10-24x	ZG308787	Button Spring	TH-6017
10-25	SK305653	Push Button (A)	CN-6309
10-26x	ZG305657	Button Spring	CN-6310
10-27	SK305654	Push Button (B)	CN-6309
10-28x	ZG305657	Button Spring	CN-6310
		FINAL ASSEMBLY BLOCK	
10-29x	ZS325495	Tapping Screw #2, 3x6 (BR)	
10-30x	SP308778	Bottom Plate	TH-6008
10-31	SA301411	Square Foot Part GX-215D	2-6-15

When ordering parts, Please describe Parts Number, Description, and Model Number in detail.

Ref. No.	Parts No.	Description	Schematic No.
10-32x	ZS413234	Screw, pan head 4×12	
10-33x	ZS201341	Screw, truss head 4×8 (Black)	
10-34x	BC312396	Upper Cover (B)	NE-6201
10-35	SP308805	Side Plate	TH-6034
10-36	ZS520525	Screw, binding head 4×25 (Black)	
10-37	ZW548010	Spot Facing Washer	MU-6028
10-38	ZS613901	Panel Screw	CW-6031
10-39	ZW308796	Panel Washer	TH-6030
10-40	SZ308782	Memory Ring	TH-6012
10-41x	ML308783	Memory Ring Holder	TH-6013
10-42x	SZ311866	Ring Felt	TH-5054
10-43	SK308791	Double Knob (Upper)	TH-6025
10-44	SK308792	Double Knob (Lower)	TH-6026
10-45	SK308818	Knob (D)	TH-6046
10-46	SK308795	Knob (C)	TH-6029
10-47	SK308793	Knob (A)	TH-6027
10-48	SK308794	Knob (B)	TH-6028
10-49	SK632610	Pinch Roller Cap (B) Part TE	TW-6019
10-50x	SP308798	Back Board (B) (U/T)	TH-6031,6033
10-51x	SP308797	Back Board (A) (JPN)	TH-6031,6032
10-52x	SP308800	Back Board (D) (CSA, AAL)	TH-6031,6050
10-53x	SP308799	Back Board (C) (CEE, UK)	TH-6031,6049
10-54x	ZS297641	Tapping Screw #2, 3x8 (Bind) W=10	
10-55x	ZS422965	Screw, pan head 3×15	

11. LIST OF INTERCHANGEABLE SEMICONDUCTORS

If, while servicing, the original parts cannot be obtained, the interchangeable parts listed below can be substituted.

Original Parts			Interchangeable Parts	
Description	Parts No.	Utilizing P.C Board	Description	Parts No.
2SC458 (D)	ET308975	TH-5001A TH-5003A	2SC945L (P)	ET638504
2SC458LG (D)	ET352146	TH-5001A TH-5003A	2SC1844 (E) (F)	ET308954
2SC945L (P)	ET638504	TH-5001A TH-5003A	2SC458 (D)	ET308975
2SC945L (Q) (P)	ET639437	TH-5001A TH-5003A	2SC1815 (GR)	ET308980
2SC2130 (H)	ET311336	TH-5001A TH-5003A	2SC711 (H)	ET429748
2SK68 (M)	ET308978	TH-5001A TH-5003A	2SK117 (GR)	ET303697
M53200P	EI430661	TH-1015	MB400/7400	EI304165
M53202P	EI633960	TH-1015	MB417/7402	EI305238
M53204P	EI573840	TH-1015	MB418/7404	EI304166
1S2473 1S2473VE	ED624903 ED560913	TH-5001A TH-5003A TH-1015	1S1588	ED557447
1K34A-LR 1K34A-LH	ED308952 ED308953	TH-5001A TH-5003A TH-1015	1N34A	ED219464
W03B	ED306109	TH-1015	10D1	ED224526
10D4	ED224550	TH-1015	1N4004	ED570273
SR-105D	ED698826	TH-2043 TH-2046	GL-3AR1	ED249377
GL-3AR1	ED249377	TH-5001B TH-5003B	SR-105D	ED698826

Chart-8

NOTE: Semi-conductors not listed on chart must be replaced by the original parts.

INDEX

Parts No.	Ref. No. & Symbol No.
BA308262	(1)-1
BA308263	(1)-2
BA308264	(1)-3
BA308275	(2)-1
BA308296	(2)-2
BC312396	10-34x
BD308215	10-7
BD308217	10-11
BH308277	2-1x
BM308310	3-1x
BM587518	4-11
BR587553	4-1x
BT308918	6-4
BT308919	6-5x
BT308920	6-7x
BT308921	6-6x
BZ308219	10-2x
BZ308220	10-1
BZ308227	5-1x
BZ308228	5-2x
BZ308285	9-4
BZ308315	3-7
EC220410	(1)-C7
EC249592	6-11
EC294118	6-2x
EC295997	(1)-C1
EC301320	6-3x
EC304186	(1)-C39,40
EC304708	(1)-C35to37
EC305677	(2)-C3
EC305677	(2)-C29
EC305677	(2)-C32
EC306420	(2)-C20
EC306438	(2)-C36
EC306987	(2)-C30
EC308940	(1)-C44,45
EC308943	(1)-C48
EC308950	(1)-C46,47
EC308990	(2)-C25
EC310366	(1)-C52
EC310368	(1)-C20
EC310370	(1)-C19
EC310372	(1)-C101to128
EC310374	(1)-C53
EC313265	(2)-C48
EC313577	(1)-C49
EC313624	(2)-C15
EC313868	(2)-C1
EC313868	(2)-C22
EC405898	(2)-C30
EC450270	(1)-C4
EC459145	(1)-C5
EC516701	(2)-C29
EC551160	6-1x
EC558202	(2)-TC1,2
ED224550	(1)-D51,52
ED224550	(1)-D54
ED224550	(1)-D56
ED249377	(4)-D1,2
ED283138	7-33
ED303005	7-34
ED306109	(1)-D49
ED308941	(1)-D9
ED308941	(1)-D50
ED308945	(1)-D1
ED308945	(1)-D3
ED308951	(1)-D5
ED308952	(1)-D10,11
ED308952	(1)-D14
ED308952	(1)-D17
ED308952	(1)-D33,34
ED308952	(1)-D36to38
ED308952	(1)-D44
ED308952	(1)-D46
ED308952	(2)-D1,2
ED308952	(2)-D4
ED308953	(1)-D12,13
ED308953	(1)-D28
ED308953	(1)-D41,42
ED308953	(1)-D45
ED309069	(1)-D4
ED313623	(1)-D2
ED510772	(1)-D6
ED560913	(1)-D7,8
ED560913	(1)-D16
ED560913	(1)-D19to22
ED560913	(1)-D26
ED560913	(1)-D29to32
ED560913	(1)-D39,40
ED560913	(1)-D43
ED560913	(1)-D47,48
ED560913	(1)-D53
ED560913	(1)-D55
ED560913	(1)-D57
ED560913	(2)-D3
ED560913	(2)-D5to8
ED624903	(1)-D15
ED624903	(1)-D18
ED624903	(1)-D24
ED624903	(1)-D27
ED624903	(1)-D35
ED698826	7-11
ED698826	7-35
EF308923	6-31x
EF563681	6-26
EF563703	6-27x
EF575932	6-29x
EF593706	6-33x
EF616555	6-28x
EF623103	6-34x
EF659698	6-30x
EF683313	6-32x
EI306141	(2)-IC1
EI308936	(1)-IC1
EI430661	(1)-IC2,3
EI573840	(1)-IC5
EI633960	(1)-IC4
EJ249333	(2)-P1,2
EJ249366	(2)-P3,4
EJ249467	6-24
EJ262732	6-23
EJ301513	6-19x
EJ305629	(2)-J1
EJ305739	(2)-J2
EJ306985	(2)-J3
EJ307274	6-13
EJ308986	(2)-J3
EJ310390	2-30
EJ310391	2-31x
EJ310392	2-32
EJ310446	2-33x
EM309050	9-17x
EM309051	9-16
EO301448	(2)-L1
EO301467	(2)-L2
EO308974	(2)-L4
EO308982	(2)-L3
EO313608	(2)-L5,6
EP280743	(1)-RL6
EP308949	(1)-RL5
EP308973	(2)-RL1
EP309056	7-3
EP309061	(1)-RL1to4
EP310447	7-24
EP310447	9-1
EP310448	7-13
ER300820	(1)-CR1to14
ER306299	(2)-R82
ER308955	(1)-R112
ER308956	(1)-R111
ER309092	(1)-R110
ES301435	(2)-SW1
ES301436	(2)-SW4
ES301715	(2)-SW5
ES306292	(2)-SW6
ES308913	7-9
ES308914	7-8
ES308925	7-12
ES308929	5-8
ES308983	(2)-SW3
ES308984	(2)-SW2
ES309058	7-50x
ES309059	7-49x
ES309094	(1)-SW1
ES313622	7-48
ES313792	6-20x
ES573478	7-51
ET208012	(2)-TR16
ET307349	(1)-TR3
ET308937	(1)-TR16to19
ET308937	(1)-TR22
ET308937	(1)-TR24,25
ET308947	(1)-TR13
ET308975	(2)-TR4
ET308978	(2)-TR11
ET311336	(2)-TR12
ET312497	(1)-TR1
ET352146	(2)-TR1to3
ET352146	(2)-TR7to9
ET399846	(1)-TR21
ET522268	(1)-TR20
ET554657	(1)-TR9,10
ET554657	(1)-TR12
ET638504	(2)-TR5,6
ET638504	(2)-TR10
ET639437	(1)-TR2
ET639437	(1)-TR4to8
ET639437	(1)-TR11
ET639437	(1)-TR14,15
ET639437	(1)-TR23
ET639437	(1)-TR26to32
ET639437	(2)-TR13to15
ET639437	(2)-TR17to23
EV301437	(2)-VR6
EV302718	(1)-VR1
EV305636	(2)-VR3,4
EV305637	(2)-VR1,2
EV306989	(2)-VR5
EV308917	7-2
EV308966	(2)-VR7
EV308995	(3)-VR1,2
EV309071	(1)-VR2
EW305691	6-18x
EW306427	6-17x
EW306428	6-16
EW308922	5-6
EZ308712	5-17
EZ631945	6-15
HA308686	2-18
HA308687	2-19
HA309409	2-16
HA309410	2-17
HB308681	2-9
HB308685	2-13
HB309407	2-10
HB309408	2-11
HE308149	2-21
HP308146	2-23
HR308148	2-22
HZ301366	2-24
HZ301777	2-8
HZ308709	5-21
HZ308710	5-19
HZ309411	2-20x
HZ528581	2-4
MB308701	7-69
MB308714	5-28
MB428343	7-16
MB606712	7-38
MB606712	9-2
MC308242	7-1
MH257477	9-13
MH578957	2-5
MI308707	5-16
ML301123	9-9
ML308677	7-29
ML308737	7-28
ML308783	10-41x
ML308810	10-4x
ML308811	10-5x
ML308904	7-65
ML308905	7-25
ML533643	7-57
ML582041	7-52
ML582074	7-56
MP424023	7-62
MR308713	5-27
MR308715	5-30
MS342000	4-2
MS527591	7-21
MT314987	7-53
MT436860	4-8
MT534677	4-4
MT534688	4-6
MV368886	3-8
MZ301084	9-8
MZ314998	7-54
MZ397181	7-26
MZ535072	5-20
MZ585900	3-9
MZ597690	3-10
SA301411	10-31
SA312529	7-45x
SB308785	10-23
SB308907	10-21
SB308908	10-20
SB308909	10-19
SB308910	10-18
SB308911	10-17
SC308813	10-3
SE301134	10-8
SE305651	10-16
SE306143	10-15
SE308780	10-14
SE308781	10-12
SE308784	10-10
SE308786	10-13
SK305653	10-25
SK305654	10-27
SK308791	10-43
SK308792	10-44
SK308793	10-47
SK308794	10-48
SK308795	10-46
SK308818	10-45
SK597633	3-5
SK632610	10-49
SP308778	10-30x
SP308797	10-51x
SP308798	10-50x
SP308799	10-53x
SP308800	10-52x
SP308805	10-35
SZ308717	5-3
SZ308718	5-5
SZ308782	10-40
SZ311866	10-22x
SZ311866	10-42x
ZG301072	9-10
ZG301073	9-11
ZG301340	7-59
ZG303300	2-12
ZG305657	10-26x
ZG305657	10-28x
ZG308722	5-11
ZG308728	7-20
ZG308734	7-6
ZG308787	10-24x
ZG312399	5-23
ZG312400	9-12
ZG313099	7-67
ZG317496	4-9
ZG466312	2-7
ZG540617	4-3
ZG567685	5-15
ZG576314	7-30
ZG580522	7-27
ZG672478	7-72
ZS201341	10-33x
ZS201778	2-28

INDEX

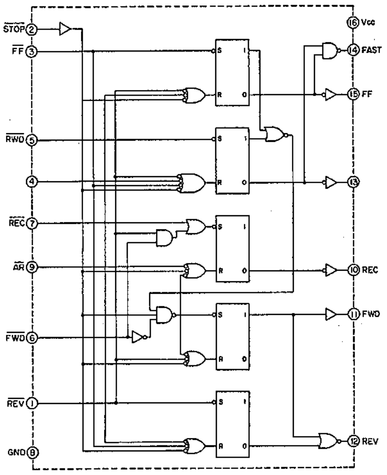
Parts No.	Ref. No. & Symbol No.
ZS297641	10-54x
ZS302720	7-31
ZS308931	5-9
ZS309096	7-68x
ZS323728	7-47
ZS325495	6-12
ZS325495	7-44x
ZS325495	9-5
ZS325495	10-29x
ZS413201	2-3
ZS413201	3-12
ZS413201	7-37x
ZS413234	10-32x
ZS417150	7-46x
ZS417216	5-4
ZS417216	7-55
ZS417407	2-15
ZS419670	4-7
ZS419670	7-39
ZS421740	6-14
ZS421806	(1)-4
ZS422076	6-22x
ZS422076	7-10
ZS422076	9-3
ZS422965	5-18
ZS422965	10-55x
ZS424056	4-10
ZS435273	6-9
ZS444262	7-23
ZS447761	6-21x
ZS447840	9-6
ZS460440	2-25
ZS463353	6-25
ZS479474	5-22
ZS520525	10-36
ZS527681	7-64
ZS592378	7-4x
ZS608095	2-26
ZS608308	3-6x
ZS608321	5-14
ZS608321	7-58x
ZS608321	10-6x
ZS608501	2-14
ZS613901	10-38
ZW260076	7-18x
ZW263946	9-7
ZW265522	2-6
ZW270088	4-5
ZW270088	7-7
ZW270088	9-14
ZW270101	5-13
ZW270101	7-61x
ZW270123	7-17
ZW270156	7-60x
ZW273756	7-32
ZW273756	(1)-5
ZW273914	2-2
ZW273914	7-40x
ZW274026	7-42x
ZW290283	7-15
ZW302896	5-7
ZW307294	5-26
ZW308796	10-39
ZW308916	6-8x
ZW308927	5-24
ZW308928	5-29
ZW308930	5-12
ZW309054	7-36
ZW309055	2-27
ZW313593	7-5
ZW313822	5-25x
ZW330412	7-70x
ZW330423	7-71x
ZW376391	7-63
ZW413188	7-41x
ZW413267	6-10
ZW413278	3-11
ZW413278	7-22
ZW413278	7-43x
ZW420682	7-19
ZW548010	10-37
ZW550697	5-10
ZW575730	10-9x
ZW580173	7-66
ZW597543	3-2
ZW597622	3-4
ZW605698	3-3
ZW625241	9-15
ZW668621	2-29
ZW678723	7-14

SECTION 3

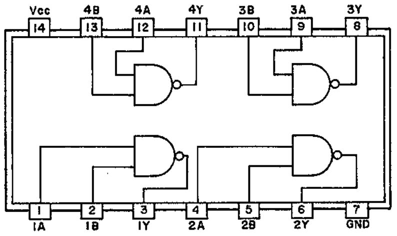
SCHEMATIC DIAGRAM

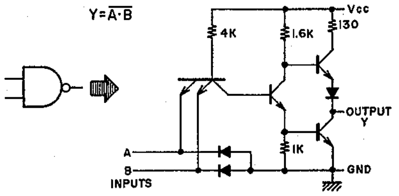
1. GX-635D/DB NO. 2-1 1562416A SCHEMATIC DIAGRAM
2. GX-635D NO. 2-2 1562417A AMP SCHEMATIC DIAGRAM

M54410P

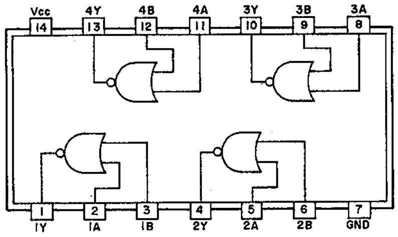

STOP ②
FF ③
RWD ⑤
④
REC ⑦
AH ⑨
FWD ⑥
REV ①
GND ⑧
⑯ Vcc
⑭ FAST
⑮ FF
⑬
⑩ REC
⑪ FWD
⑫ REV
S
R
1
0

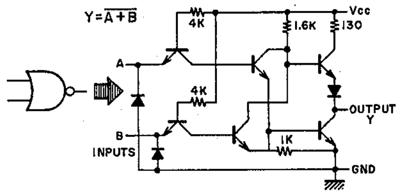
M53200P


Vcc 14
4B 13
4A 12
4Y 11
3B 10
3A 9
3Y 8
1 1A
2 1B
3 1Y
4 2A
5 2B
6 2Y
7 GND

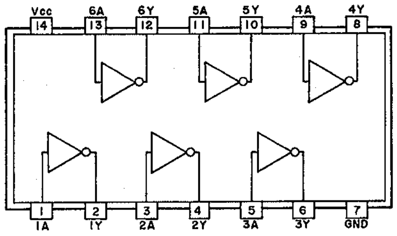

$Y=\overline{A\cdot B}$
Vcc
4K
1.6K
130
OUTPUT Y
1K
A
B
INPUTS
GND

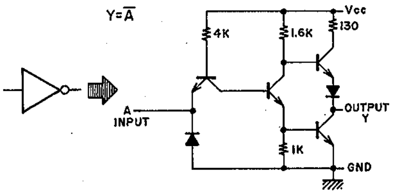
M53202P


Vcc 14
4Y 13
4B 12
4A 11
3Y 10
3B 9
3A 8
1 1Y
2 1A
3 1B
4 2Y
5 2A
6 2B
7 GND

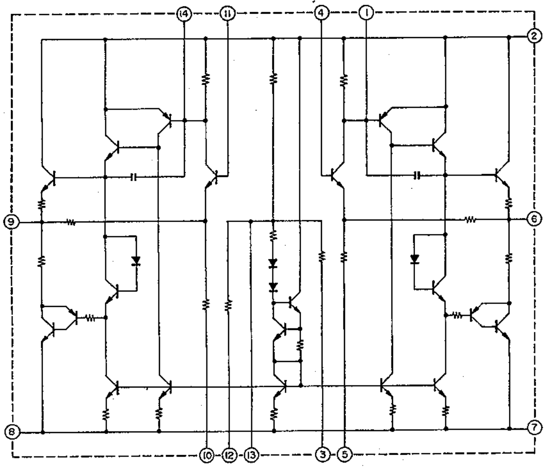

$Y=\overline{A+B}$
4K
Vcc
1.6K
130
A
4K
OUTPUT Y
B
INPUTS
1K
GND

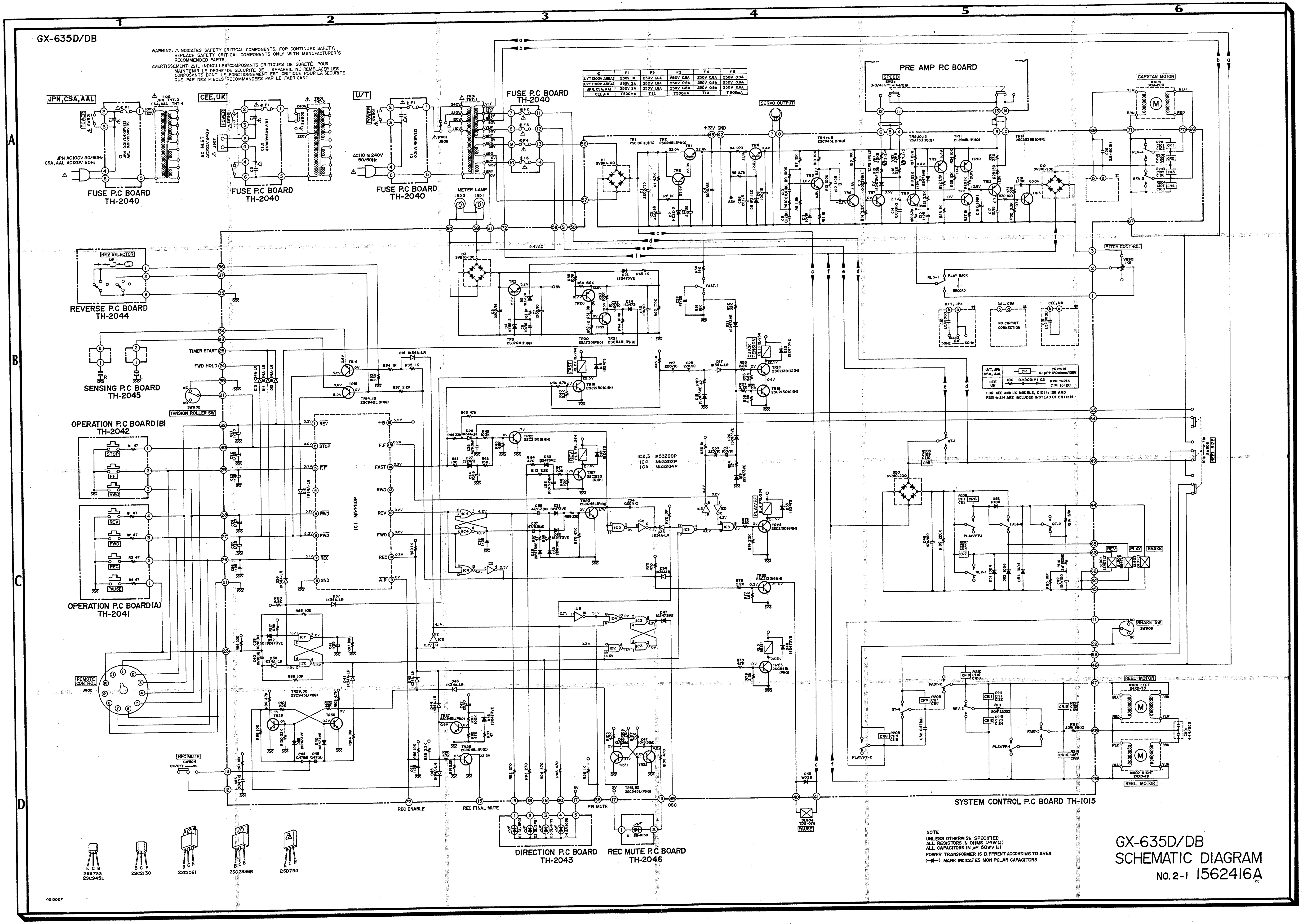
M53204P


Vcc 14
6A 13
6Y 12
5A 11
5Y 10
4A 9
4Y 8
1 1A
2 1Y
3 2A
4 2Y
5 3A
6 3Y
7 GND


$Y=\overline{A}$
Vcc
4K
1.6K
130
A
INPUT
OUTPUT Y
1K
GND

LA4170


⑭
⑪
④
①
②
⑨
⑥
⑧
⑦
⑩
⑫
⑬
③
⑤


GX-635D/DB
1
2
3
4
5
6
A
B
C
D
JPN,CSA,AAL
CEE,UK
U/T
T901 JPN THT-2 CSA,AAL THT-4
T901 THT-3
T901 THT-1
POWER SW901
JPN AC100V 50/60Hz CSA,AAL AC120V 60Hz
AC INLET AC220/240V J907
AC110 to 240V 50/60Hz
FUSE P.C BOARD TH-2040
PRE AMP P.C BOARD
SPEED SW2a
SERVO OUTPUT
CAPSTAN MOTOR M903 SCM-200
METER LAMP
REV SELECTOR
REVERSE P.C BOARD TH-2044
SENSING P.C BOARD TH-2045
TIMER START
FWD HOLD
TENSION ROLLER SW SW902
OPERATION P.C BOARD (B) TH-2042
OPERATION P.C BOARD (A) TH-2041
STOP
FF
RWD
REV
FWD
REC
PAUSE
IC1 M54410P
IC2,3 M53200P
IC4 M53202P
IC5 M53204P
REMOTE CONTROL J905
REC MUTE SW904
REC ENABLE
REC FINAL MUTE
PB MUTE
OSC
DIRECTION P.C BOARD TH-2043
REC MUTE P.C BOARD TH-2046
PITCH CONTROL VR901
PLAY BACK
RECORD
REEL SIZE SW903
BRAKE SW SW906
REEL MOTOR M901 LEFT 24X0-TD
REEL MOTOR M902 RIGHT 24X0-TD
SL904 TDS-07A PAUSE
SYSTEM CONTROL P.C BOARD TH-1015
2SA733 2SC945L
2SC2130
2SC1061
2SC2336B
2SD794
001000F

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

*	F1	F2	F3	F4	F5
U/T(200V AREA)	250V 1A	250V 1.6A	250V 0.8A	250V 0.8A	250V 0.8A
U/T(100V AREA)	250V 2A	250V 1.6A	250V 0.8A	250V 0.8A	250V 0.8A
JPN, CSA, AAL	250V 2A	250V 1.6A	250V 0.8A	250V 0.8A	250V 0.8A
CEE,UK	T500mA	T1A	T500mA	T1A	T500mA

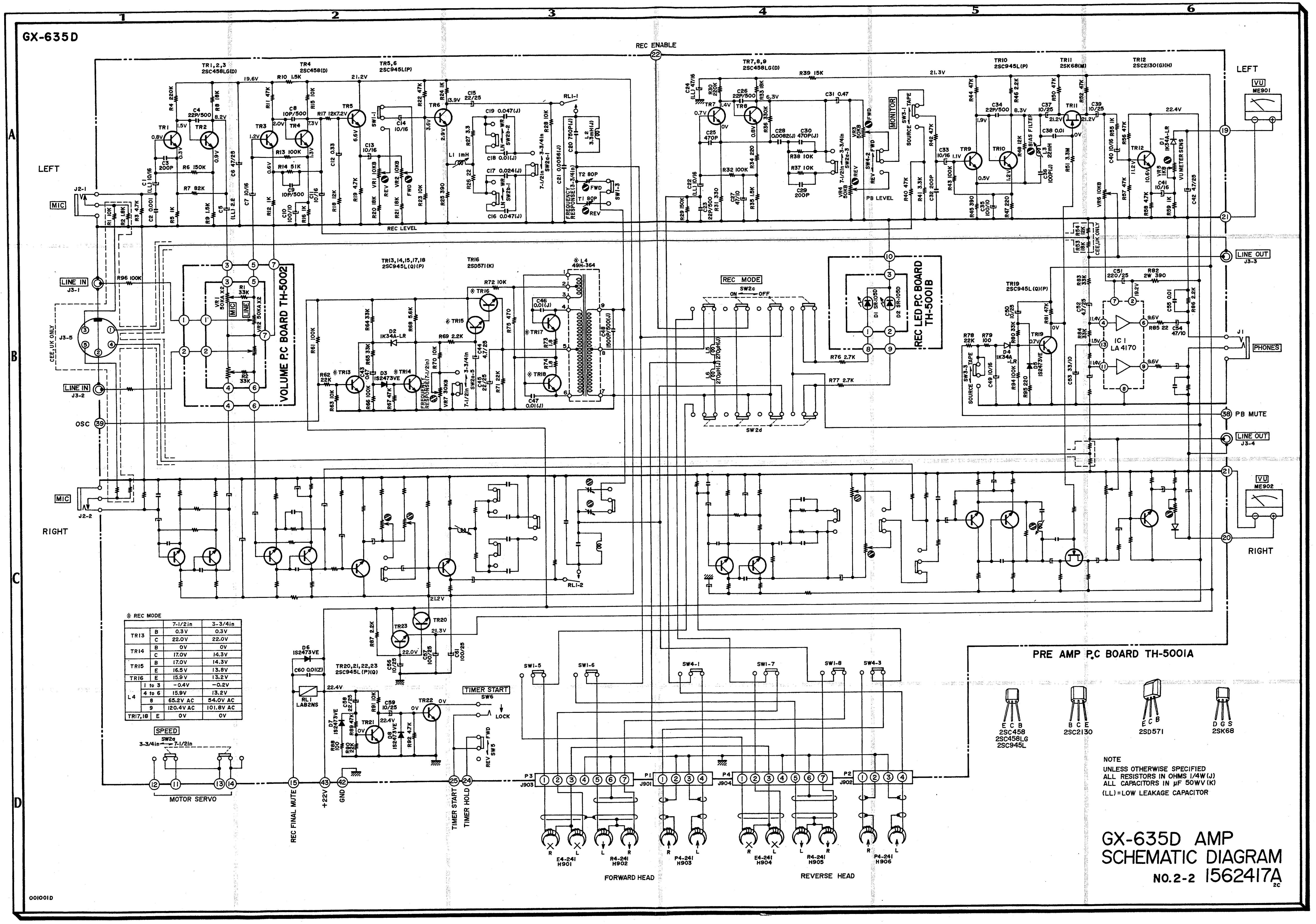
U/T, JPN CSA, AAL	CR	CR1 to 14 0.1µF+120 ohms/125V
CEE UK	100 0.1/200(M) X2	R201 to 214 C101 to 128

FOR CEE AND UK MODELS, C101 to 128 AND R201 to 214 ARE INCLUDED INSTEAD OF CR1 to 14

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN µF 50WV (J)
POWER TRANSFORMER IS DIFFRENT ACCORDING TO AREA
(—⧓—) MARK INDICATES NON POLAR CAPACITORS

GX-635D/DB SCHEMATIC DIAGRAM

NO.2-1 1562416A 2C


GX-635D
1
2
3
4
5
6
A
B
C
D
REC ENABLE
LEFT
RIGHT
MIC
J2-1
J2-2
LINE IN
J3-1
J3-2
J3-5
CEE,UK ONLY
OSC
TR1,2,3
2SC458LG(D)
TR4
2SC458(D)
TR5,6
2SC945L(P)
TR7,8,9
2SC458LG(D)
TR10
2SC945L(P)
TR11
2SK68(M)
TR12
2SC2130(G)(H)
TR13,14,15,17,18
2SC945L(Q)(P)
TR16
2SD571(K)
TR19
2SC945L(Q)(P)
IC 1
LA 4170
TR20,21,22,23
2SC945L(P)(Q)
VOLUME P.C BOARD TH-5002
REC LED P.C BOARD TH-5001B
REC MODE
SW2c
ON
OFF
SW2d
MONITOR
SOURCE
TAPE
PB LEVEL
REC LEVEL
BIAS FILTER
VU METER SENS
FREQUENCY RESPONSE(3-3/4in)
FREQUENCY RESPONSE(7-1/2in)
L4
49H-364
RL1
LAB2NS
LINE OUT
J3-3
J3-4
PHONES
J1
PB MUTE
VU
ME901
ME902
TIMER START
SW6
LOCK
FWD
REV
SW5
MOTOR SERVO
REC FINAL MUTE
+22V
GND
TIMER START
TIMER HOLD
P3
J903
P1
J901
P4
J904
P2
J902
E4-241
H901
R4-241
H902
P4-241
H903
E4-241
H904
R4-241
H905
P4-241
H906
FORWARD HEAD
REVERSE HEAD
PRE AMP P.C BOARD TH-5001A
E C B
2SC458
2SC458LG
2SC945L
B C E
2SC2130
E C B
2SD571
D G S
2SK68
001001D

※ REC MODE

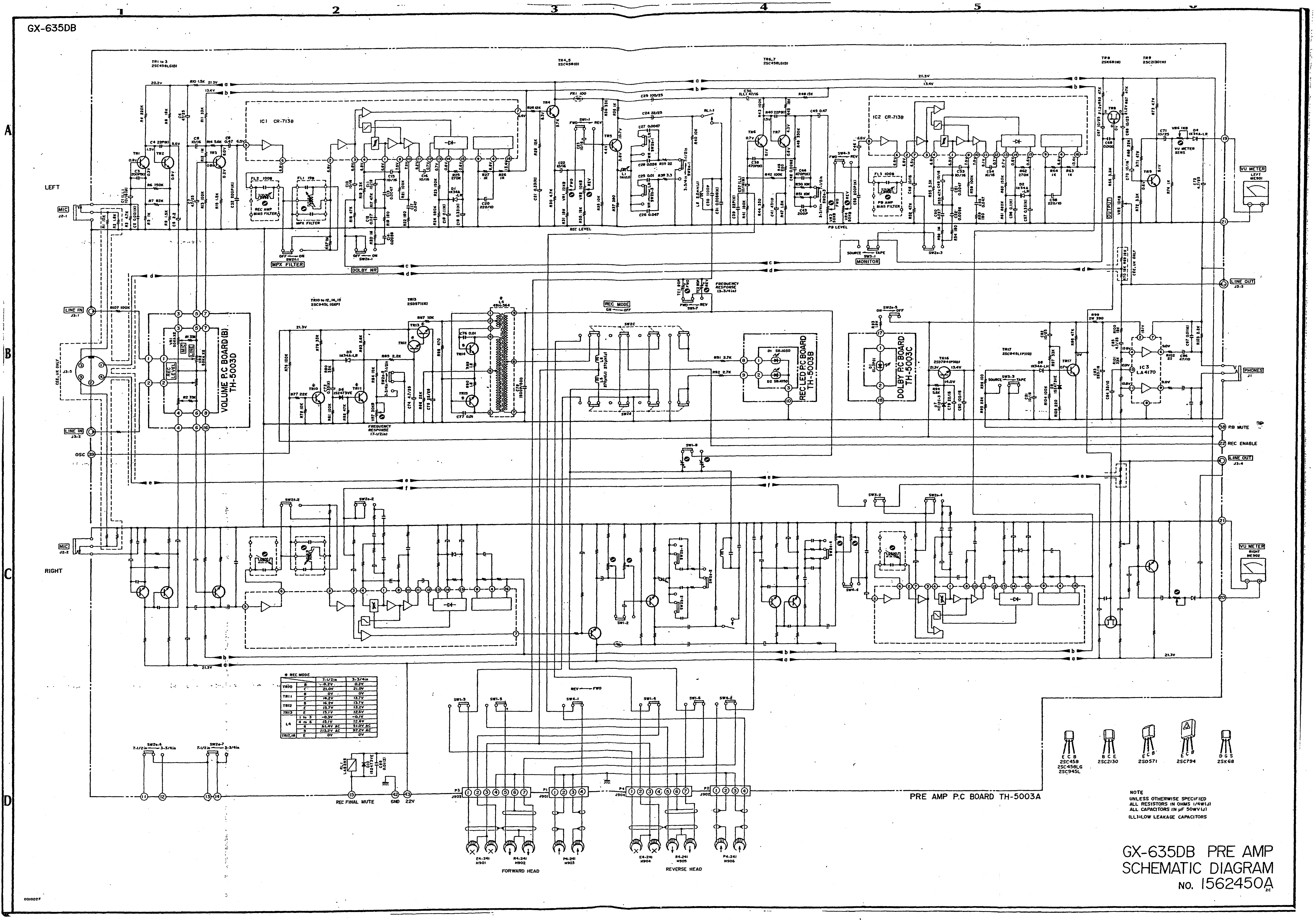
		7-1/2in	3-3/4in
TR13	B	0.3V	0.3V
	C	22.0V	22.0V
TR14	B	0V	0V
	C	17.0V	14.3V
TR15	B	17.0V	14.3V
	E	16.5V	13.8V
TR16	E	15.9V	13.2V
L4	1 to 3	-0.4V	-0.2V
	4 to 6	15.9V	13.2V
	8	65.2V AC	54.0V AC
	9	120.4V AC	101.8V AC
TR17,18	E	0V	0V

SPEED
SW2a
3-3/4in ⟷ 7-1/2in

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN µF 50WV(K)
(LL)=LOW LEAKAGE CAPACITOR

GX-635D AMP SCHEMATIC DIAGRAM

NO.2-2 1562417A 2C


GX-635DB
LEFT
RIGHT
MIC J2-1
MIC J2-2
LINE IN J3-1
LINE IN J3-2
OSC
IC1 CR-713B
IC2 CR-713B
IC3 LA4170
MPX FILTER
DOLBY NR
REC LEVEL
PB LEVEL
MONITOR
SOURCE
TAPE
REC MODE
FREQUENCY RESPONSE (7-1/2in)
FREQUENCY RESPONSE (3-3/4in)
VOLUME P.C BOARD (B) TH-5003D
REC LED P.C BOARD TH-5003B
DOLBY P.C BOARD TH-5003C
VU METER LEFT ME901
VU METER RIGHT ME902
VU METER SENS
LINE OUT J3-3
LINE OUT J3-4
PHONES J1
PB MUTE
REC ENABLE
REC FINAL MUTE
GND
22V
PRE AMP P.C BOARD TH-5003A
FORWARD HEAD
REVERSE HEAD
E4-241 H901
R4-241 H902
P4-241 H903
E4-241 H904
R4-241 H905
P4-241 H906
E C B
2SC458
2SC458LG
2SC945L
B C E
2SC2130
E C B
2SD571
E C B
2SC794
D G S
2SK68

✱ REC MODE

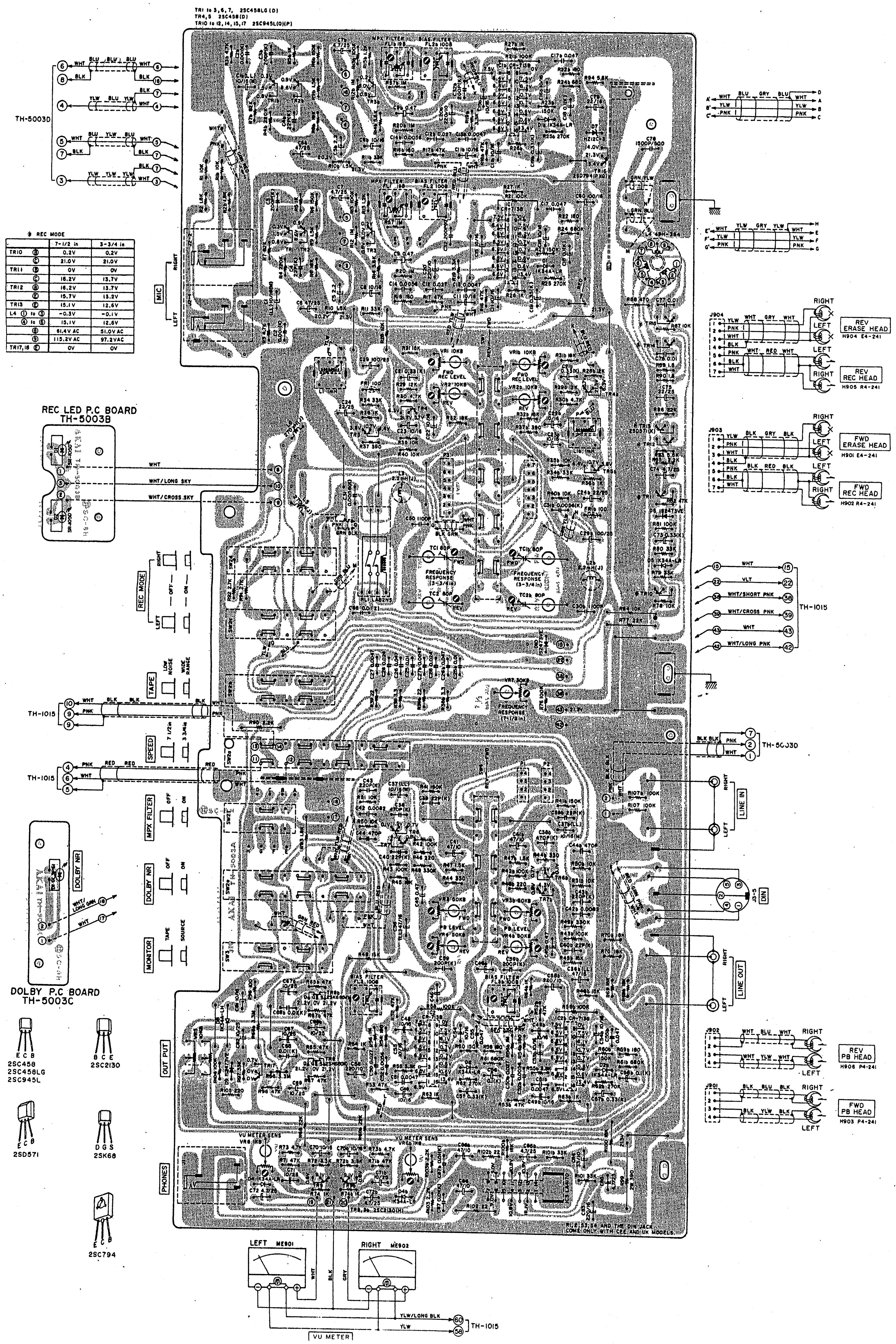
		7-1/2in	3-3/4in
TR10	B	-0.2V	0.2V
	C	21.0V	21.0V
TR11	B	0V	0V
	C	16.2V	13.7V
TR12	B	16.2V	13.7V
	E	15.7V	13.2V
TR13	E	15.1V	12.6V
L4	1 to 3	-0.3V	-0.1V
	4 to 6	15.1V	12.6V
	8	61.4V AC	51.0V AC
	9	113.2V AC	97.2V AC
TR17, 18	E	0V	0V

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)
(LL)=LOW LEAKAGE CAPACITORS

GX-635DB PRE AMP SCHEMATIC DIAGRAM

NO. 1562450A 2C

PRE AMP P.C BOARD TH-5003A (3ED), REC LED P.C BOARD TH-5003B AND DOLBY P.C BOARD TH-5003C


TR1 to 3, 6, 7, 2SC458LG (D)
TR4, 5 2SC458(D)
TR10 to 12, 14, 15, 17 2SC945L(Q)(P)
TH-5003D
MIC
LEFT
RIGHT
REC LED P.C BOARD
TH-5003B
WHT
WHT/LONG SKY
WHT/CROSS SKY
REC MODE
OFF
ON
TAPE
LOW NOISE
WIDE RANGE
TH-1015
SPEED
7 1/2in
3 3/4in
MPX FILTER
DOLBY NR
MONITOR
TAPE
SOURCE
DOLBY P.C BOARD
TH-5003C
OUT PUT
PHONES
2SC458
2SC458LG
2SC945L
2SC2130
2SD571
2SK68
2SC794
FREQUENCY RESPONSE
R1,2,33,34 AND THE DIN JACK COME ONLY WITH CEE AND UK MODELS.
LEFT ME901
RIGHT ME902
YLW/LONG BLK
YLW
VU METER
TH-5003D
LINE IN
DIN
J3-5
LINE OUT
J904
REV ERASE HEAD
H904 E4-241
REV REC HEAD
H905 R4-241
J903
FWD ERASE HEAD
H901 E4-241
FWD REC HEAD
H902 R4-241
WHT/SHORT PNK
WHT/CROSS PNK
WHT/LONG PNK
VLT
J902
REV PB HEAD
H906 P4-241
J901
FWD PB HEAD
H903 P4-241

✱ REC MODE

		7-1/2 in	3-3/4 in
TR10	Ⓑ	0.2V	0.2V
	Ⓒ	21.0V	21.0V
TR11	Ⓑ	0V	0V
	Ⓒ	16.2V	13.7V
TR12	Ⓑ	16.2V	13.7V
	Ⓔ	15.7V	13.2V
TR13	Ⓔ	15.1V	12.6V
L4	① to ③	-0.3V	-0.1V
	④ to ⑥	15.1V	12.6V
	⑧	61.4V AC	51.0V AC
	⑨	115.2V AC	97.2VAC
TR17, 18	Ⓔ	0V	0V

AKAI

Kundendienst
Informationen

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Telex 04185332 akaid

Nr. A-o9/8o Dreieich, 23.o7.198o wfs

Betr.: GX-635 D/DB

1. GX-635 D/DB

a. Zur Verbesserung der Übersprechwerte wird das genannte Gerät mit einem neuen Wiedergabekopf ausgestattet.

Alter Kopf: P 4-241 Best.-Nr. HP-3o8146
Neuer Kopf: P 4-251 Best.-Nr. HP-318522

Die Köpfe sind untereinander austauschbar.

Diese Änderung wird werksseitig ab August 1979 durchgeführt.

AS-oo81

b. Zur Stabilisierung des Einschaltvorganges bei "Timer"-Betrieb (Bandschlaufenbildung durch zu lockeren "Tension-arm") sind die beiden folgenden Bauteile zu ändern:

Alt: Zener-Diode WZ-12o Best.-Nr. ED-51o772 ("D-5") (Steuerplatine)
Neu: Zener-Diode WZ-13o Best.-Nr. ED-539976 ("D-5") "

Alt: Elko (Vert.-Type) 1oo uF, 1oo V Best.-Nr. EC-313577 ("C-49")
Neu: Elko (Vert.-Type) 47 uF, 1oo V o. Best.-Nr. ("C-49")

Diese Änderung wird werksseitig ab August 1979 durchgeführt.

AS-oo81

2. GX-635 DB

Zur Verbesserung des Einstellbereiches der beidern Regler VR-1 und VR-2 dient die folgende Äanderung auf der Vorverstärkerplatine:

Alt: R-31, R-32 je 18 KOhm, 1/4 Watt
Neu: R-31, R-32 je 1o KOhm, 1/4 Watt

Alt: VR-1, VR-2, je 1o KOhm-Einstellregler (Best.-Nr. EV-3o5637)
Neu: VR-1, VR-2 je 2o KOhm-Einstellregler (Best.-Nr. EV-315414)

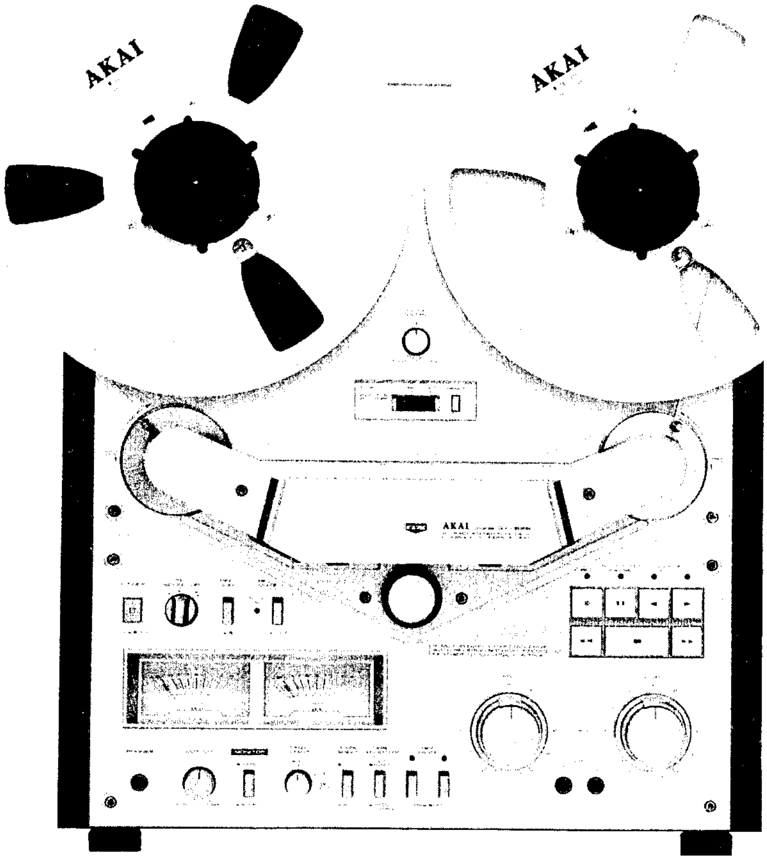
Diese Änderung wird werksseitig ab August 1979 durchgeführt.

AS-oo81

AKAI-00107

GX-636

AKAI SERVICE MANUAL



THIS MANUAL MUST BE USED AS A SET TOGETHER WITH SEPARATELY PUBLISHED GX-635D SERVICE MANUAL AND PARTS LIST.

STEREO TAPE DECK

MODEL GX-636

AKAI-00351

SERVICE MANUAL
PARTS LIST

MODEL GX-635D

AKAI

AKAI
AKAI
AKAI

STEREO TAPE DECK

MODEL GX-635D

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SECTION 1

SERVICE MANUAL

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For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. TECHNICAL DATA

TRACK SYSTEM	4 track 2 channel stereo/monaural system
REEL CAPACITY	Up to 10-1/2" reel
TAPE SPEED	19 cm/s ±0.8% (7-1/2 ips) 9.5 cm/s ±1.0% (3-3/4 ips) (Pitch control: more than ±6%)
WOW & FLUTTER	Less than 0.03% WRMS at 19 cm/s Less than 0.04% WRMS at 9.5 cm/s Less than 0.08% DIN 45500 at 19 cm/s Less than 0.10% DIN 45500 at 9.5 cm/s
FREQUENCY RESPONSE	30 to 27,000 Hz ±3 dB at 19 cm/s using WR Tape 30 to 21,000 Hz ±3 dB at 9.5 cm/s using WR Tape 30 to 25,000 Hz ±3 dB at 19 cm/s using LN Tape 30 to 19,000 Hz ±3 dB at 9.5 cm/s using LN Tape
DISTORTION (1,000 Hz "0" VU)	Less than 0.5% at 19 cm/s
SIGNAL TO NOISE RATIO	Better than 62 dB DIN 45500
ERASE RATIO	Better than 70 dB (at 1,000 Hz)
CROSS TALK	Better than 40 dB (at 1,000 Hz)
CHANNEL SEPARATION	Better than 55 dB (at 1,000 Hz)
BIAS FREQUENCY	100 kHz
HEADS	(6): Two GX Recording Heads, Two GX Playback Heads, Two Erase Heads
MOTORS	(3): One AC Servo Motor for Capstan Drive Two AC Eddy Current Motors for Reel Drive
REAL TIME COUNTER	Up to 99 min 59 sec, Less than ±1.5%
FF & RWD TIME	120 sec using 550m (1,800 ft.) Tape
OUTPUT JACKS	Line (2): 0.775V (0 VU) Required load impedance: more than 20 kohms Phone (1): 100 mV/8 ohms
INPUT JACKS	Microphone (2): 0.25 mV Required microphone impedance: 600 ohms LINE (2): 70 mV impedance 100 kohms
DIN JACK	Input 2.0 mV, impedance 10 kohms, Output 0.3V
DIMENSIONS	440(W) x 483(H) x 256(D) mm, (17.4 x 19.0 x 10.1")
WEIGHT	21 kg (46.4 lbs)
POWER REQUIREMENT	100V, 50/60 Hz for JPN 120V, 60 Hz for US & Canada 220/240V, 50 Hz for Europe, UK and Australia 110/120/220/240V, 50/60 Hz internally switchable for other countries

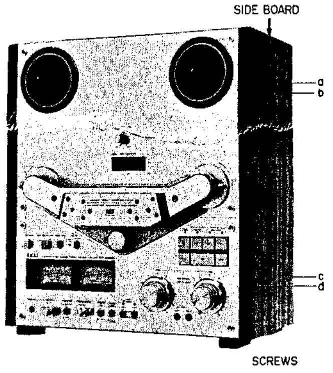
*** Specifications determined with Akai LN-150-7 or SCOTCH #211 tape unless otherwise noted.**

*** For improvement purposes, specifications and design are subject to change without notice.**

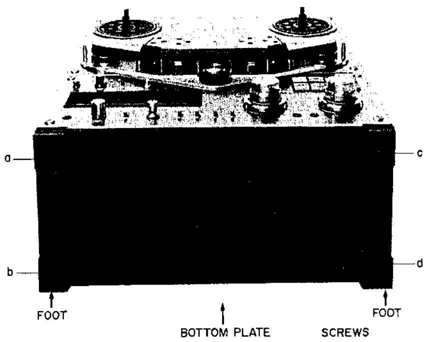
II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

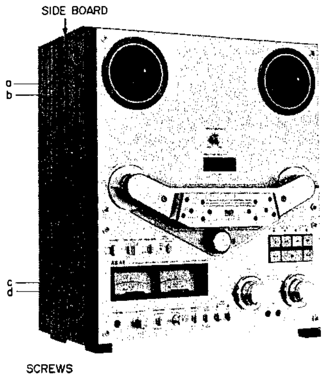
1


SIDE BOARD
a
b
c
d
SCREWS

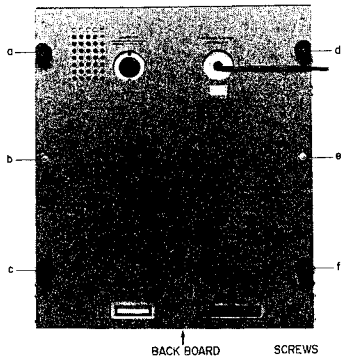
5


a
c
b
d
FOOT
FOOT
BOTTOM PLATE
SCREWS

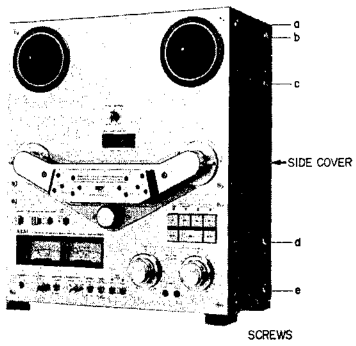
2


SIDE BOARD
a
b
c
d
SCREWS

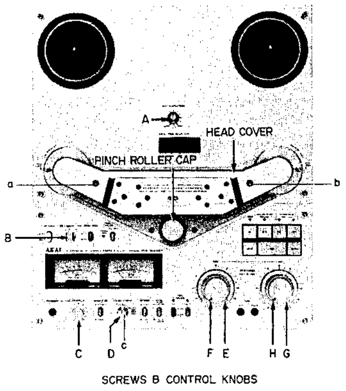
6


a
d
b
e
c
f
BACK BOARD
SCREWS

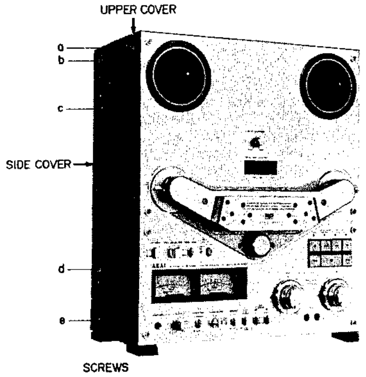
3


a
b
c
SIDE COVER
d
e
SCREWS

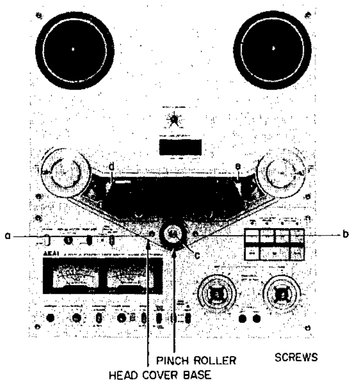
7


A
HEAD COVER
PINCH ROLLER CAP
a
b
B
C
D
c
F
E
H
G
SCREWS & CONTROL KNOBS

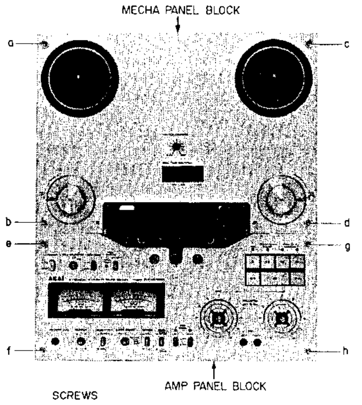
4


UPPER COVER
a
b
c
SIDE COVER
d
e
SCREWS

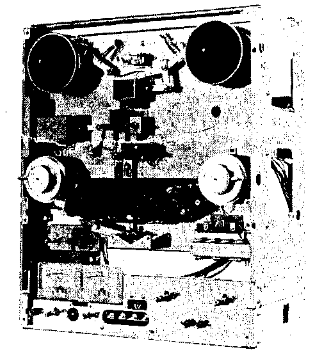
8


d
e
a
b
c
PINCH ROLLER
SCREWS
HEAD COVER BASE

9


MECHA PANEL BLOCK
a
c
b
d
e
g
f
h
AMP PANEL BLOCK
SCREWS

10



III. CONTROLS

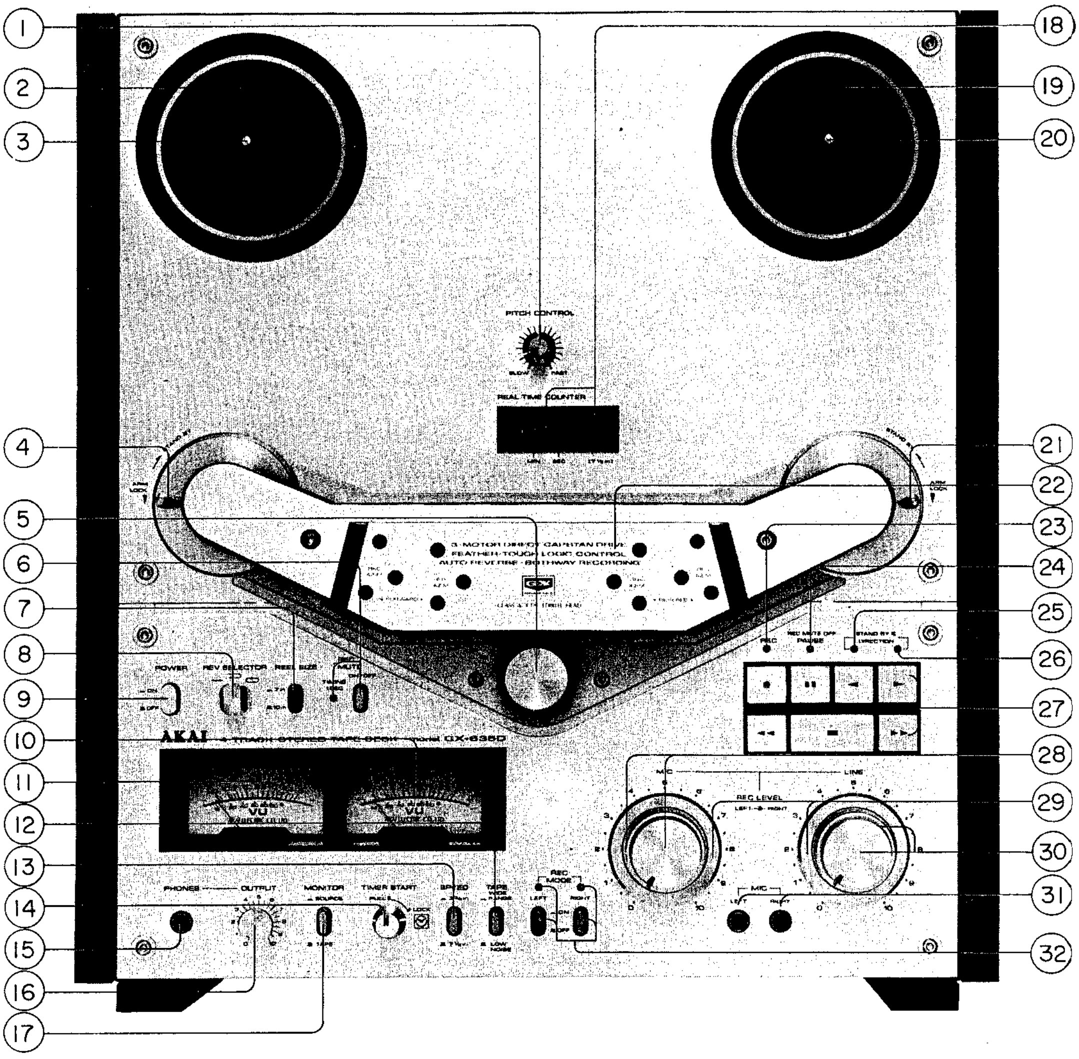

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
PITCH CONTROL
REAL TIME COUNTER
POWER
REV SELECTOR
REEL SIZE
AKAI
GX-635D
VU
VU
PHONES
OUTPUT
MONITOR
TIMER START
SPEED
REC MODE
MIC
LINE
REC LEVEL

Fig. 1 Controls

1. PITCH CONTROL
2. SUPPLY REEL TABLE
3. BUILT-IN REEL RETAINER (Left)
4. LEFT TENSION ARM
5. PINCH ROLLER
6. RECORDING MUTE SWITCH (REC MUTE)/TIMING LAMP
7. REEL SIZE SELECTOR
8. REVERSE SELECTOR
9. POWER SWITCH
10. VU METER (Right)
11. VU METER (Left)
12. TAPE SELECTOR
13. TAPE SPEED SELECTOR
14. TIMER START
15. HEADPHONE JACK
16. OUTPUT LEVEL CONTROL
17. MONITOR SWITCH
18. REAL TIME COUNTER and RESET BUTTON
19. TAKE-UP REEL TABLE
20. BUILT-IN REEL RETAINER (Right)
21. RIGHT TENSION ARM
22. HEAD COVER
23. RECORDING INDICATOR LAMP
24. PAUSE INDICATOR LAMP
25. REVERSE DIRECTION/STAND BY INDICATOR LAMP
26. FORWARD DIRECTION/STAND BY INDICATOR LAMP
27. MODE BUTTONS
28. MICROPHONE INPUT CONTROLS
29. MEMORY MARKERS
30. LINE INPUT CONTROLS
31. MICROPHONE JACKS (Left/Right)
32. RECORDING MODE SWITCH

IV. PRINCIPAL PARTS LOCATION

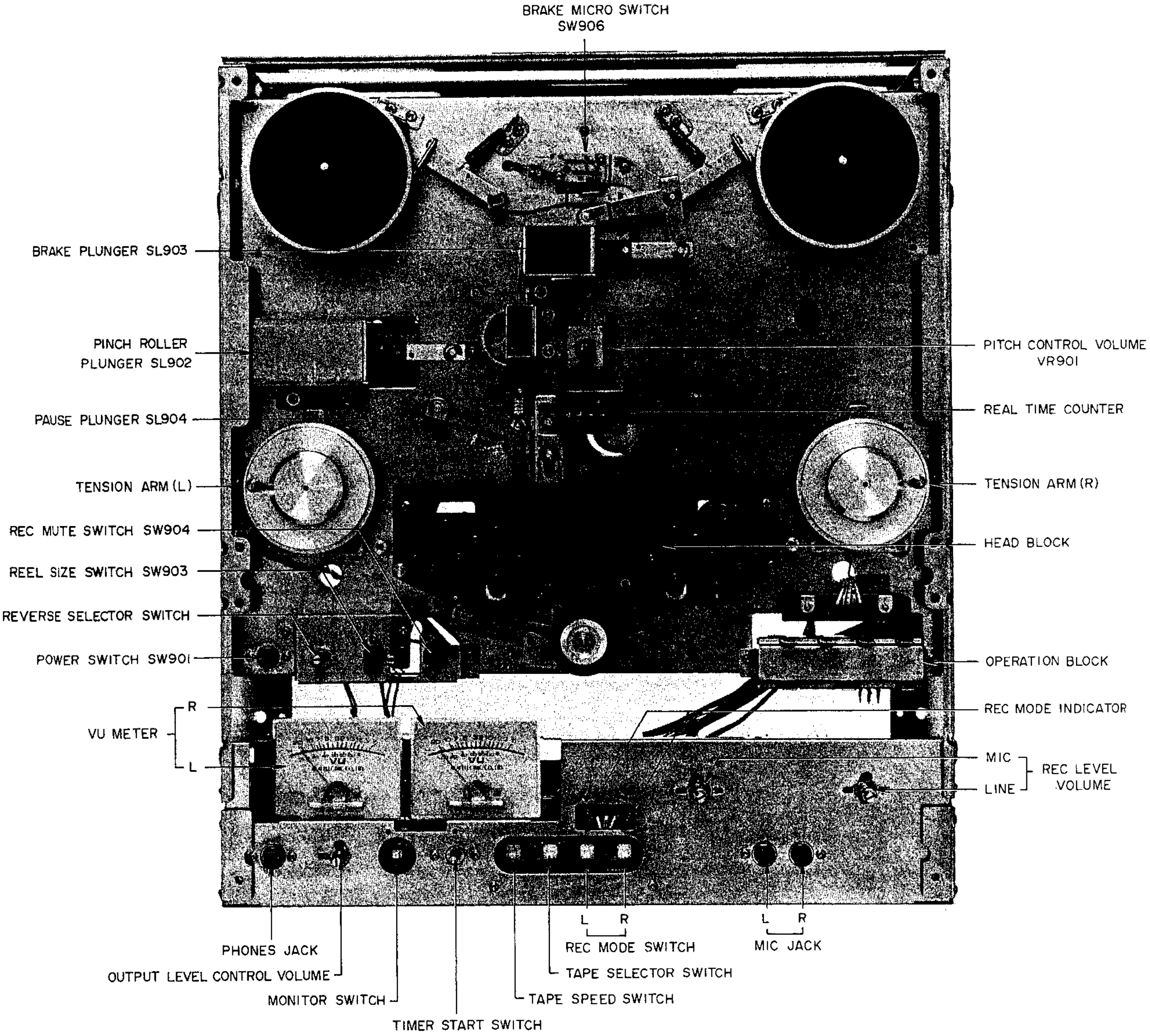

BRAKE MICRO SWITCH SW906
BRAKE PLUNGER SL903
PINCH ROLLER PLUNGER SL902
PAUSE PLUNGER SL904
TENSION ARM (L)
REC MUTE SWITCH SW904
REEL SIZE SWITCH SW903
REVERSE SELECTOR SWITCH
POWER SWITCH SW901
VU METER
R
L
PITCH CONTROL VOLUME VR901
REAL TIME COUNTER
TENSION ARM (R)
HEAD BLOCK
OPERATION BLOCK
REC MODE INDICATOR
MIC
LINE
REC LEVEL VOLUME
L R
REC MODE SWITCH
L R
MIC JACK
PHONES JACK
OUTPUT LEVEL CONTROL VOLUME
MONITOR SWITCH
TIMER START SWITCH
TAPE SELECTOR SWITCH
TAPE SPEED SWITCH

Fig. 2 Front View

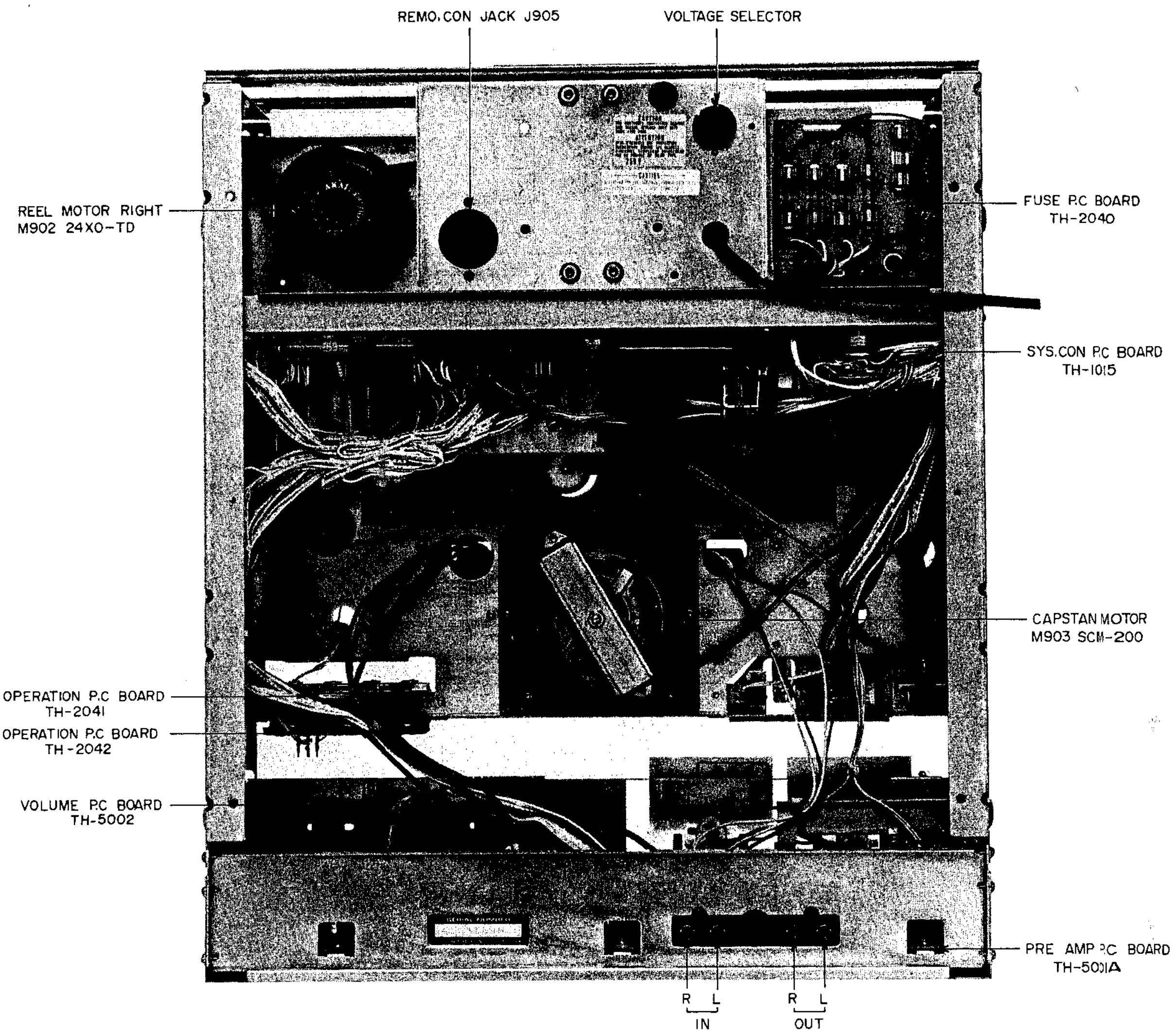
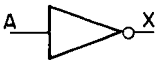
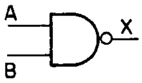
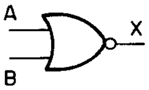

REMO.CON JACK J905
VOLTAGE SELECTOR
REEL MOTOR RIGHT
M902 24XO-TD
FUSE P.C BOARD
TH-2040
SYS.CON P.C BOARD
TH-1015
CAPSTAN MOTOR
M903 SCM-200
OPERATION P.C BOARD
TH-2041
OPERATION P.C BOARD
TH-2042
VOLUME P.C BOARD
TH-5002
PRE AMP P.C BOARD
TH-5001A
R
L
IN
R
L
OUT

Fig. 3 Rear View

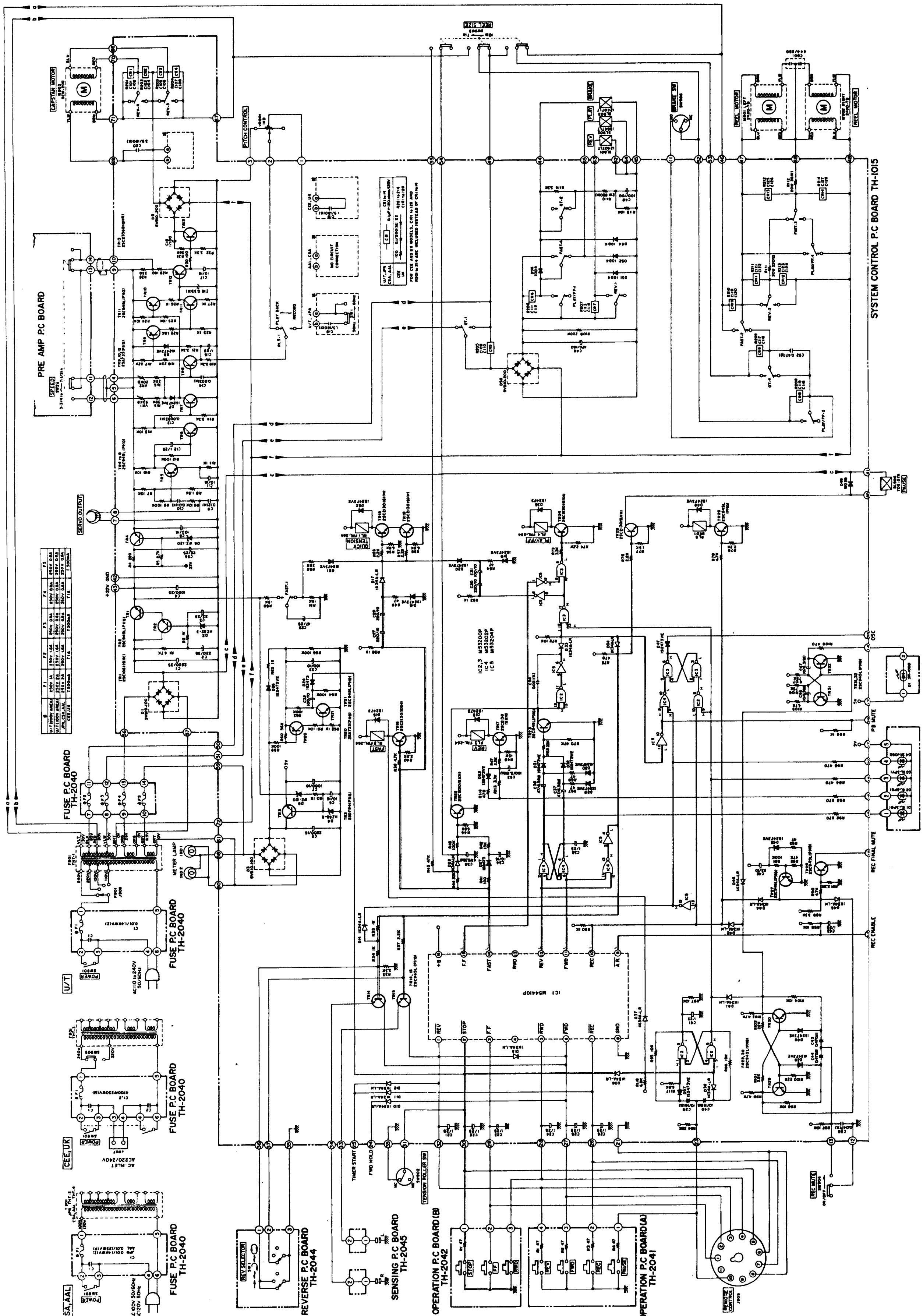
V. CIRCUIT OPERATING PRINCIPLES

1. SYSTEM CONTROL OPERATION

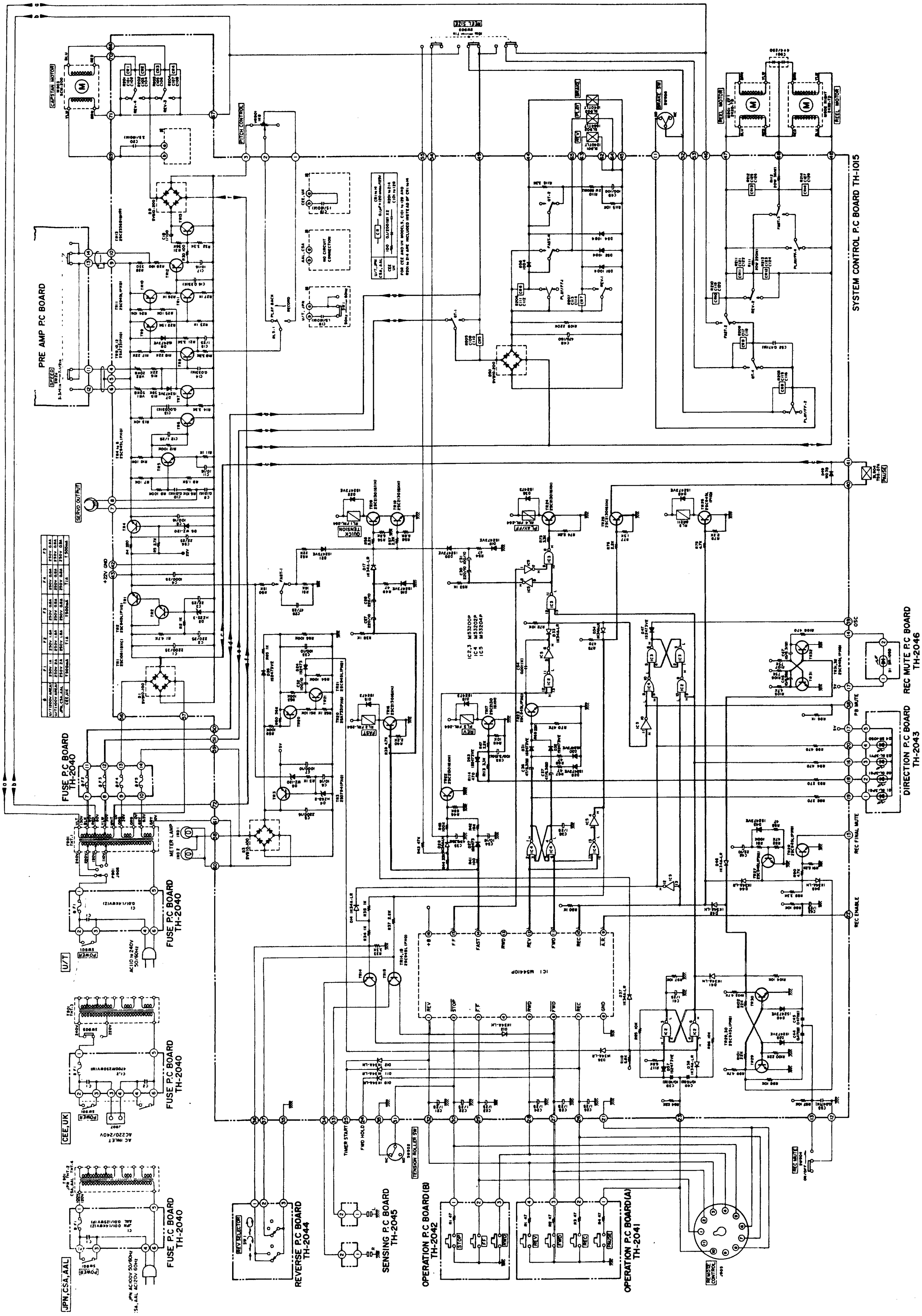
	SYMBOL	TRUTH TABLE
NOT CIRCUIT	 $X = \overline{A}$	A X 0 1 1 0
NAND CIRCUIT	 $X = \overline{A \cdot B}$	A B X 0 0 1 1 0 1 0 1 1 1 1 0
NOR CIRCUIT	 $X = \overline{A + B}$	A B X 0 0 1 1 0 0 0 1 0 1 1 0

0= LOW LEVEL
1 = HIGH LEVEL

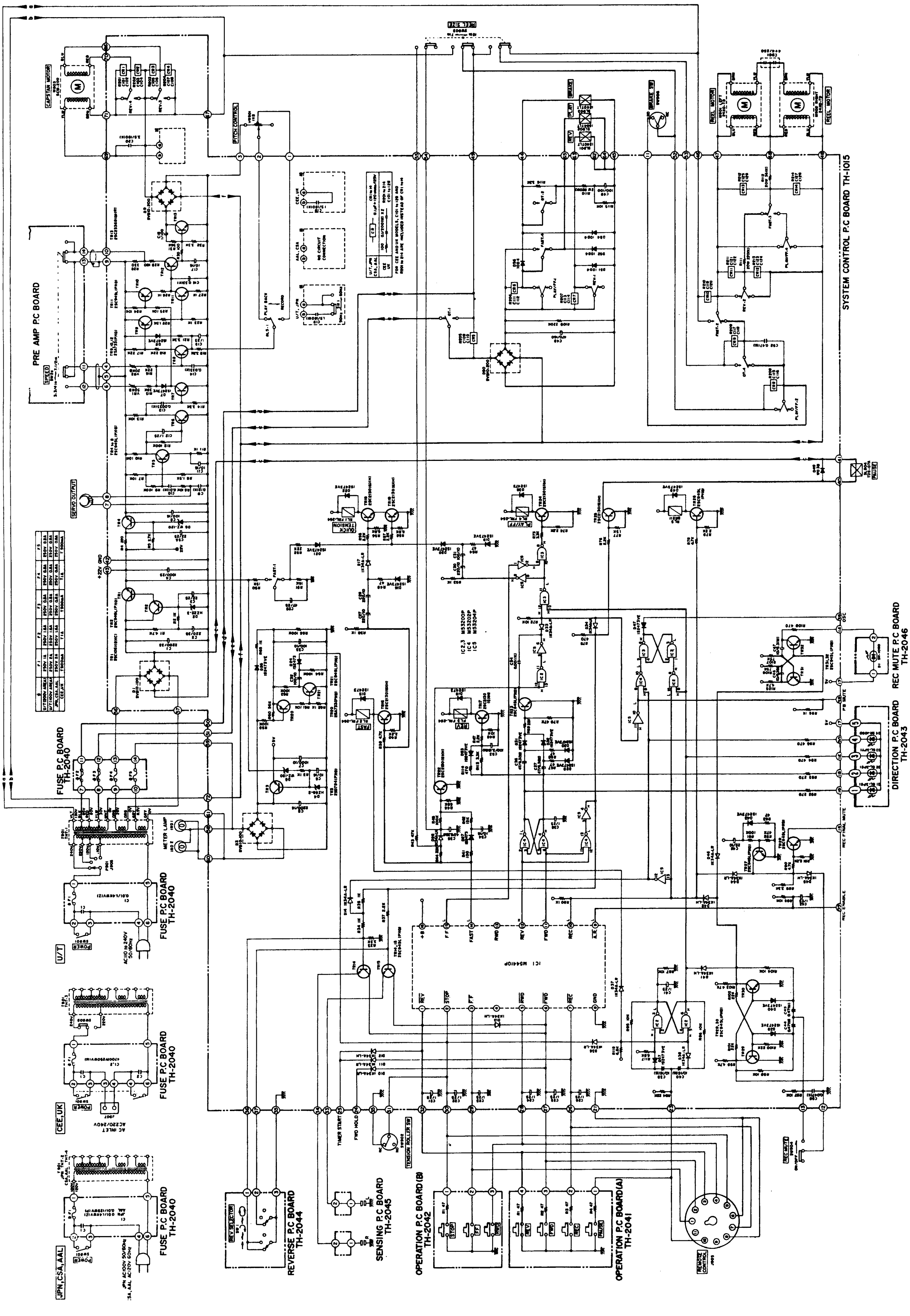
Chart-1


PRE AMP P.C BOARD
SYSTEM CONTROL P.C BOARD TH-1015
FUSE P.C BOARD TH-2040
REC MUTE P.C BOARD TH-2046
DIRECTION P.C BOARD TH-2043
REVERSE P.C BOARD TH-2044
SENSING P.C BOARD TH-2045
OPERATION P.C BOARD (B) TH-2042
OPERATION P.C BOARD (A) TH-2041
CAPSTAN MOTOR
REEL MOTOR
PITCH CONTROL
SERVO OUTPUT
SPEED
REEL SIZE
BRAKE SW
QUICK TENSION
PLAY/FF
PAUSE
REC MUTE
REMOTE CONTROL
TENSION ROLLER SW
REV SELECTOR
METER LAMP
IC1 M54410P
IC2,3 M53200P
IC4 M53202P
IC5 M53204P
U/T
CEE,UK
JPN,CSA,AAL
POWER
STOP
REV
FWD
REC
PAUSE
OSC
PB MUTE
REC FINAL MUTE
REC ENABLE

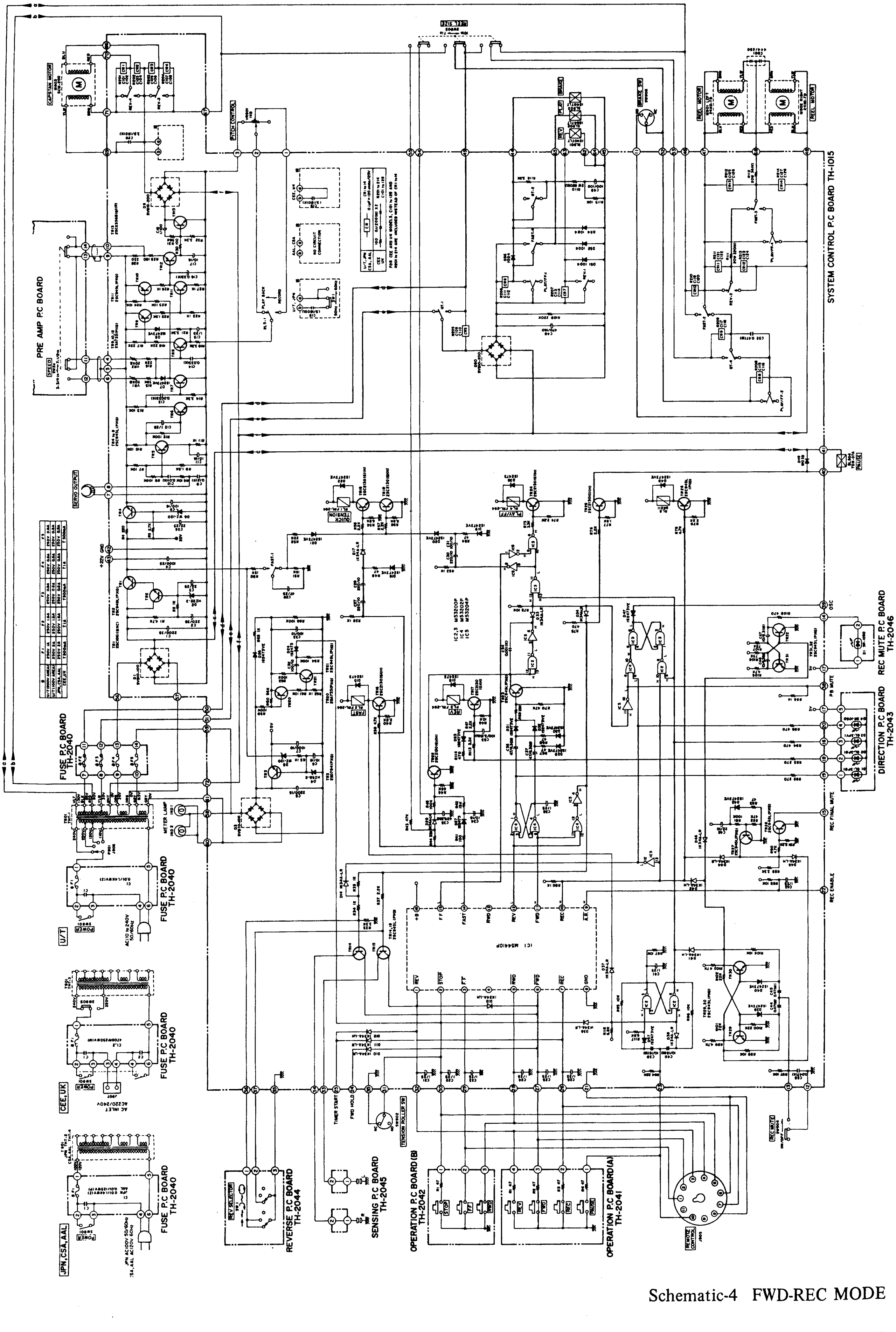
Schematic-1 STOP MODE


PRE AMP P.C BOARD
SYSTEM CONTROL P.C BOARD TH-1015
REC MUTE P.C BOARD TH-2046
DIRECTION P.C BOARD TH-2043
FUSE P.C BOARD TH-2040
REVERSE P.C BOARD TH-2044
SENSING P.C BOARD TH-2045
OPERATION P.C BOARD(B) TH-2042
OPERATION P.C BOARD(A) TH-2041
U/T
CEE,UK
JPN,CSA,AAL
CAPSTAN MOTOR
REEL MOTOR
PITCH CONTROL
SERVO OUTPUT
METER LAMP
TENSION ROLLER SW
REC MUTE
IC1 M54410P
IC2,3 M53200P
IC4 M53202P
IC5 M53204P

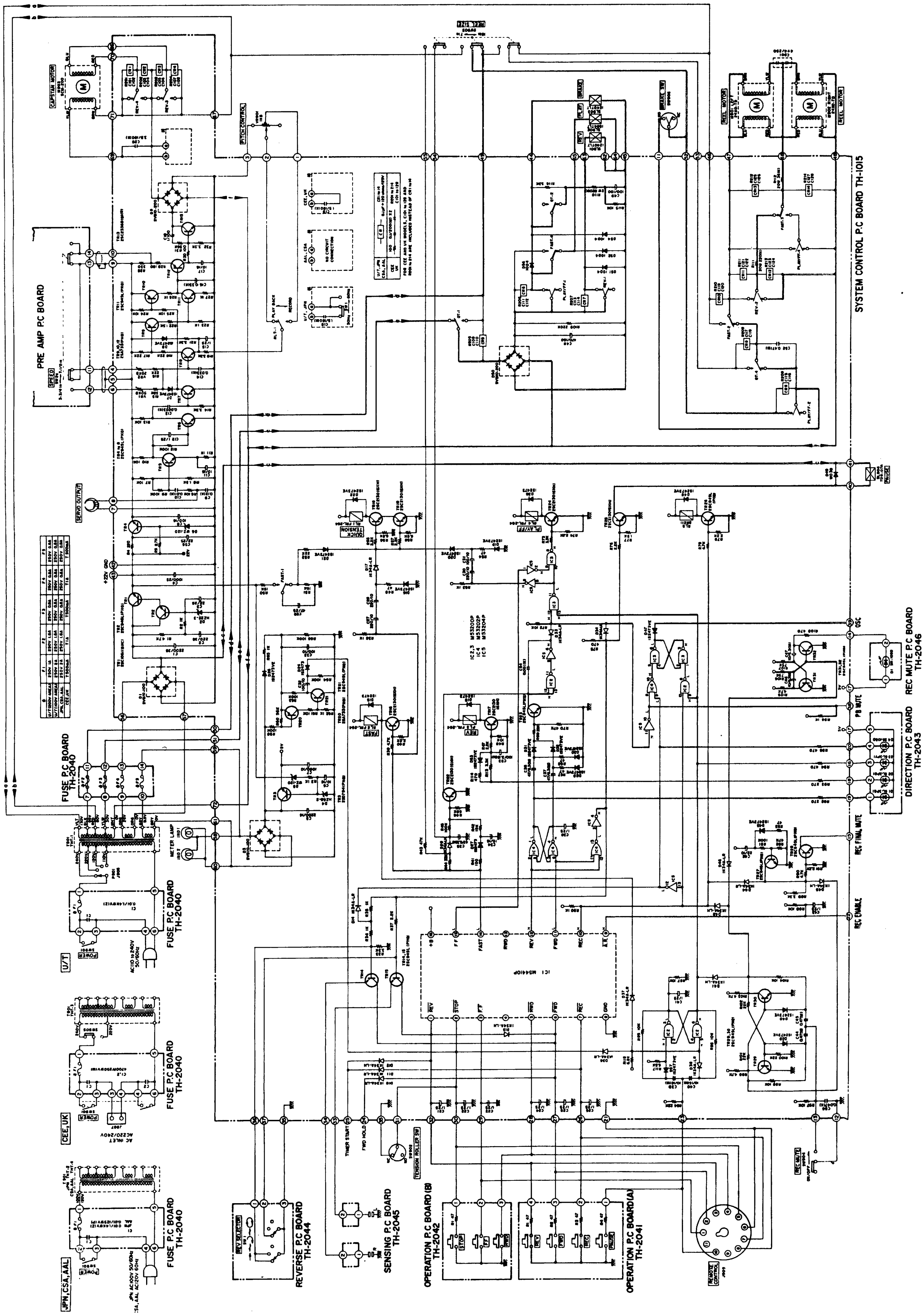
Schematic-2 FWD-PLAY MODE


PRE AMP P.C BOARD
SPEED
SERVO OUTPUT
CAPSTAN MOTOR
PITCH CONTROL
REEL MOTOR
SYSTEM CONTROL P.C BOARD TH-1015
FUSE P.C BOARD TH-2040
METER LAMP
U/T
CEE,UK
JPN,CSA,AAL
REC MUTE P.C BOARD TH-2046
DIRECTION P.C BOARD TH-2043
IC1 M54410P
REVERSE P.C BOARD TH-2044
SENSING P.C BOARD TH-2045
OPERATION P.C BOARD(B) TH-2042
OPERATION P.C BOARD(A) TH-2041
REMOTE CONTROL

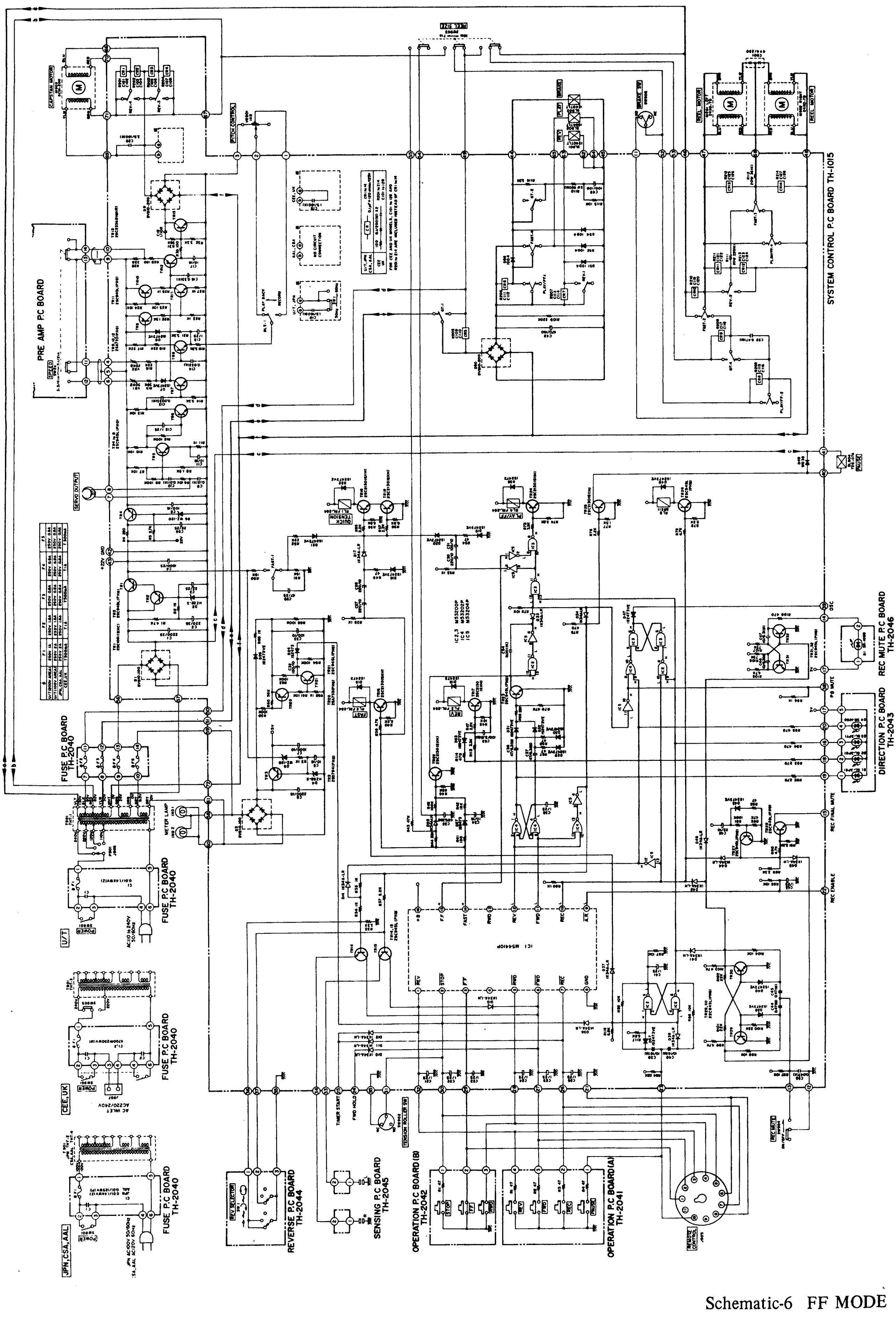
Schematic-3 REV-PLAY MODE


PRE AMP P.C BOARD
SYSTEM CONTROL P.C BOARD TH-1015
CAPSTAN MOTOR
REEL MOTOR
PITCH CONTROL
BRAKE SW
SERVO OUTPUT
FUSE P.C BOARD TH-2040
METER LAMP
REC MUTE P.C BOARD TH-2046
DIRECTION P.C BOARD TH-2043
PAUSE
OSC
PB MUTE
REC FINAL MUTE
REC ENABLE
IC1 M54410P
IC2,3 M53200P
IC4 M53202P
IC5 M53204P
QUICK TENSION
FAST
REV
PLAY/FF
TIMER START
FWD HOLD
TENSION ROLLER SW
REC MUTE
REVERSE P.C BOARD TH-2044
REV SELECTOR
SENSING P.C BOARD TH-2045
OPERATION P.C BOARD(B) TH-2042
OPERATION P.C BOARD(A) TH-2041
REMOTE CONTROL
U/T
CEE,UK
JPN,CSA,AAL
POWER
AC INLET

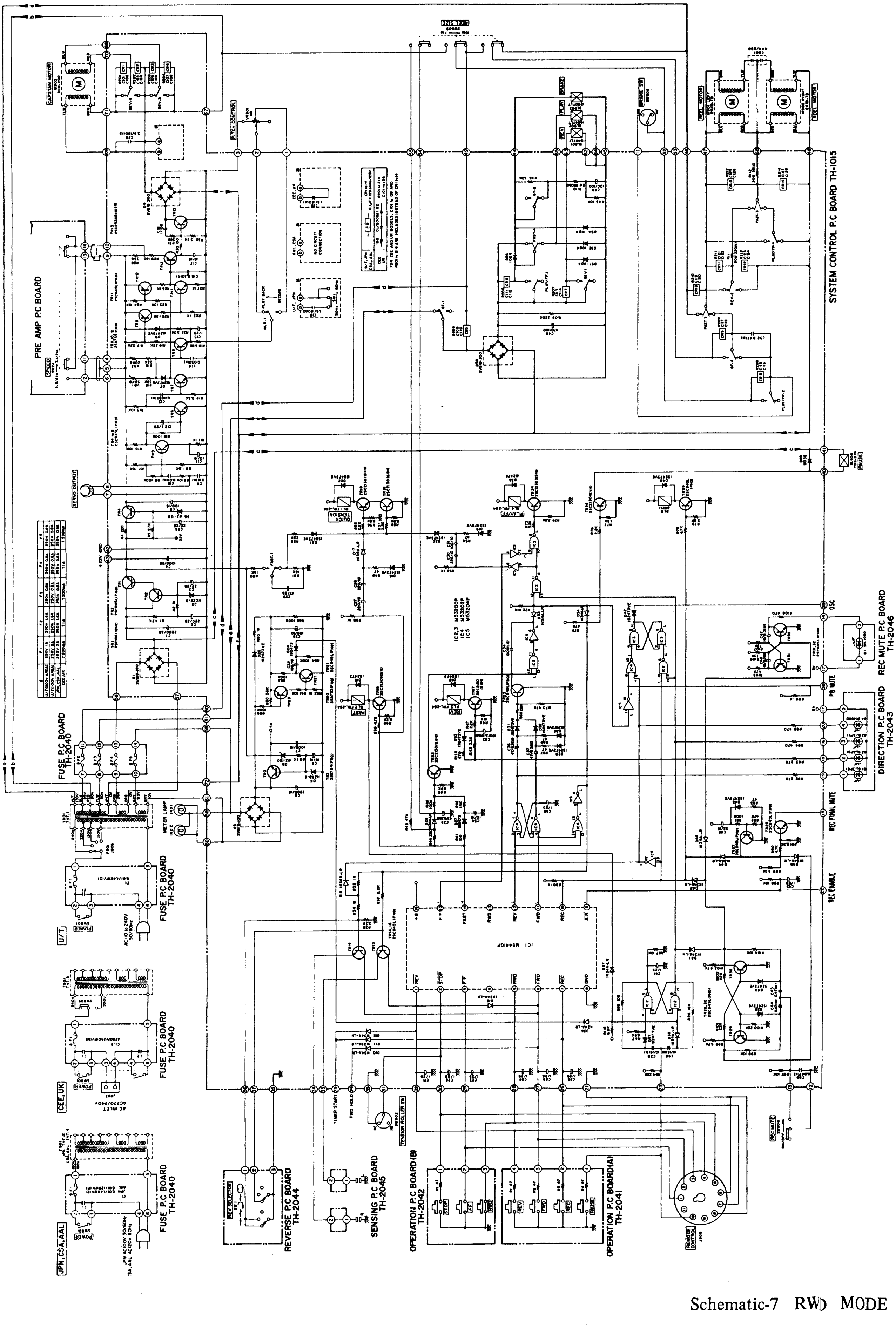
Schematic-4 FWD-REC MODE


CAPSTAN MOTOR
PITCH CONTROL
PRE AMP P.C BOARD
SPEED
SERVO OUTPUT
+22V GND
FUSE P.C BOARD TH-2040
METER LAMP
POWER
U/T
AC110 to 240V 50/60Hz
CEE,UK
AC INLET AC220/240V
JPN,CSA,AAL
REVERSE P.C BOARD TH-2044
REV SELECTOR
SENSING P.C BOARD TH-2045
TENSION ROLLER SW
TIMER START
FWD HOLD
OPERATION P.C BOARD (B) TH-2042
STOP
FF
FWD
OPERATION P.C BOARD(A) TH-2041
REV
REC
PAUSE
REMOTE CONTROL
IC1 M54410P
IC2,3 M53200P
IC4 M53202P
IC5 M53204P
QUICK TENSION
PLAY/FF
FAST
BRAKE
BRAKE SW
REEL MOTOR
SYSTEM CONTROL P.C BOARD TH-1015
OSC
REC MUTE P.C BOARD TH-2046
PB MUTE
DIRECTION P.C BOARD TH-2043
REC FINAL MUTE
REC ENABLE
REC MUTE

Schematic-5 REV-REC MODE


PRE AMP P.C BOARD
SYSTEM CONTROL P.C BOARD TH-1015
FUSE P.C BOARD TH-2040
REC MUTE P.C BOARD TH-2046
DIRECTION P.C BOARD TH-2043
REVERSE P.C BOARD TH-2044
SENSING P.C BOARD TH-2045
OPERATION P.C BOARD(B) TH-2042
OPERATION P.C BOARD(A) TH-2041
CAPSTAN MOTOR
REEL MOTOR
SERVO OUTPUT
PITCH CONTROL
IC1 M54410P
U/T
CEE, UK
JPN, CSA, AAL
REMOTE CONTROL

Schematic-6 FF MODE


PRE AMP P.C BOARD
SYSTEM CONTROL P.C BOARD TH-1015
CAPSTAN MOTOR
REEL MOTOR
PITCH CONTROL
REEL SIZE
SERVO OUTPUT
FUSE P.C BOARD TH-2040
METER LAMP
IC1 M54410P
REC MUTE P.C BOARD TH-2046
DIRECTION P.C BOARD TH-2043
OSC
PB MUTE
REC FINAL MUTE
REC ENABLE
REVERSE P.C BOARD TH-2044
SENSING P.C BOARD TH-2045
OPERATION P.C BOARD(B) TH-2042
OPERATION P.C BOARD(A) TH-2041
TENSION ROLLER SW
TIMER START
FWD HOLD
REMOTE CONTROL
REC MUTE
U/T
CEE,UK
JPN,CSA,AAL
POWER

Schematic-7 RWD MODE

1-1. CIRCUIT CONSTRUCTION OF IC1 M54410P

The design of M54410P until now had STOP, PLAY, REC, FF, RWD, PAUSE and REC preventing AR as its input terminals. GX-635D circuit is constructed with FWD in place of PAUSE and REV in place of PLAY. Pause is controlled by a flip flop with a separate IC.

1) Block Diagram

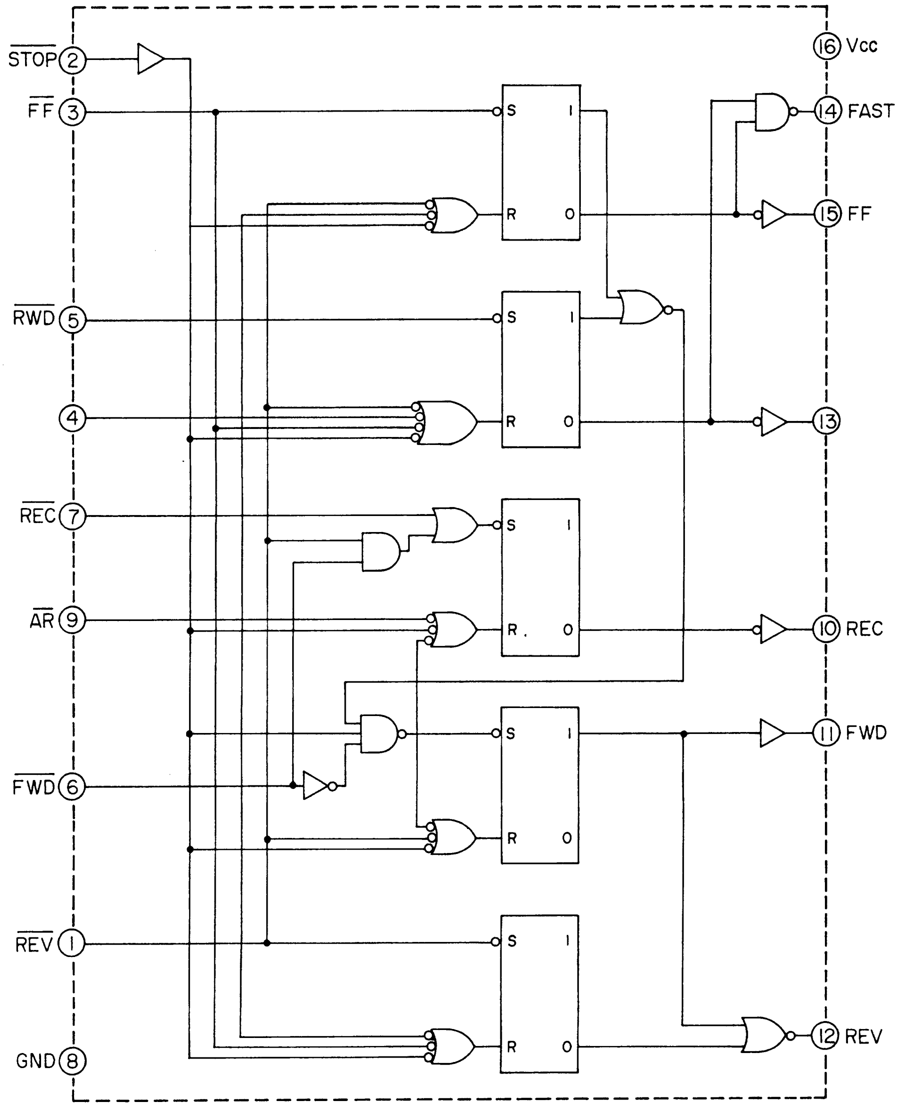

STOP 2
FF 3
RWD 5
4
REC 7
AR 9
FWD 6
REV 1
GND 8
16 Vcc
14 FAST
15 FF
13
10 REC
11 FWD
12 REV
S
R
1
0

Fig. 4 M54410P

2) Terminals and their functions

	Terminal Name	Terminal Function
Operation input terminals	$\overline{\text{STOP}}$	Input terminal for stopping operation
	$\overline{\text{FF}}$	Input terminal for fast forward
	$\overline{\text{RWD}}$	Input terminal for rewind
	$\overline{\text{FWD}}$	Input terminal for playback in the forward direction
	$\overline{\text{REV}}$	Input terminal for playback in the reverse direction
	$\overline{\text{REC}}$	Input terminal for recording
Control input terminal $\overline{\text{AR}}$		Input terminal for preventing recording
Output terminals	FAST	Terminal with "H" signal output during fast forward or rewind mode
	FF	Terminal with "H" signal output during fast forward mode
	FWD	Terminal with "H" signal output during forward playback mode
	REV	Terminal with "H" signal output during reverse playback mode
	REC	Terminal with "H" signal output during recording or REC/Pause mode

Chart-2

3) Operation activated by each input

Input Signal	Output					Output Mode
	FAST	FF	FWD	REV	REC	
$\overline{\text{STOP}}$	L	L	L	L	L	STOP Mode
$\overline{\text{FF}}$	H	H	L	L	L	FF Mode
$\overline{\text{RWD}}$	H	L	L	L	L	RWD Mode
$\overline{\text{FWD}}$	L	L	H	L	L	FWD Mode
$\overline{\text{REV}}$	L	L	L	H	L	REV Mode
$\overline{\text{REC}}/\overline{\text{FWD}}$	L	L	H	L	H	REC/FWD Mode
$\overline{\text{REC}}/\overline{\text{REV}}$	L	L	L	H	H	REC/REV Mode

Chart-3

NOTES:
1. The input signal is activated by the fall of ¯|_|¯ .
2. The output is maintained until the next input signal.
3. $\overline{\text{AR}}$ is a control input terminal and the REC output is not "H" when $\overline{\text{AR}}$ = "L".
4. When $\overline{\text{AR}}$ = "L" signal is supplied during the REC output is "H", REC output becomes "L".
5. At the moment the power is on, all output will be "L" and the Stop mode will be effected.

4) Regarding the input circuit's diode D13

Previously M54410P has been so designed that the first terminal was $\overline{\text{PLAY}}$ input and the sixth terminal was $\overline{\text{PAUSE}}$ input. But in GX-635D, $\overline{\text{PLAY}}$ is used for $\overline{\text{REV}}$ and $\overline{\text{PAUSE}}$ for $\overline{\text{FWD}}$. Consequently, grounding only the 6th terminal ($\overline{\text{FWD}}$) will not allow the modes to be changed directly from FF or RWD to FWD. For this reason, the first terminal ($\overline{\text{REV}}$) is also grounded through diode D13 releasing FF and RWD. In addition, even if there are simultaneous inputs into both $\overline{\text{FWD}}$ and $\overline{\text{REV}}$, FWD mode output is designed to take priority.

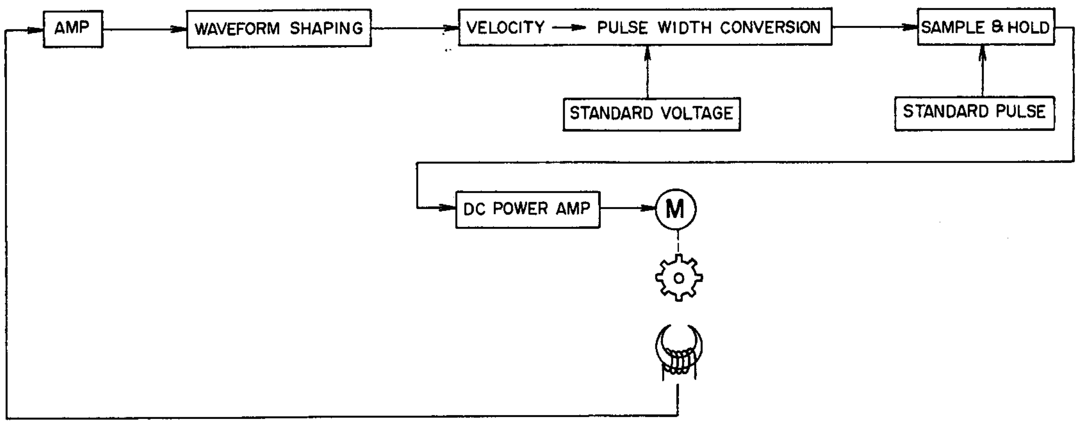


Fig. 5 Block Diagram

1-2. CIRCUIT FOR PREVENTING CLICK NOISE DURING TIMER RECORDING

1) When the power is turned on for timer recording, recording must take place after the amplifier circuit is in full operation or else click noise will be recorded. Also when the power is turned off, Rec Final Mute must operate before the amplifier circuit ceases to operate or else click noise will be recorded. This circuit prevents such click noise from being recorded.

2) In ordinary recording, base electric current flows to TR28 base through R89 and R90, and TR28 is ON. Therefore, Rec Final Mute relay RL1 (Pre Amp P.C Board) connected to TR28 collector is operating to supply the signals to the recording head and the recording mode is effected.

3) When the power is turned ON at timer recording stand-by, base electric current is supplied to TR27 base only while C42 is being charged and TR27 is turned ON. When TR27 is turned ON, electric potential is not supplied to TR28 base and TR28 is turned off. Consequently relay RL1 does not operate and Rec head is not supplied with a signal. Since TR27 turns off once C42 is charged, base electric current flows to TR28 base through R89 and R90.

   Because relay RL1 function only after the amplifier circuit is in complete operation, the click noise is avoided.

4) TR20 and TR21 is OFF during recording mode and for this reason C32 and C33 are charged.

   When the power is turned off in this condition, by the charging voltage on C33 TR20 base will become lower than the emitter in electric potential and turns ON. TR21 is also supplied with electric current thereby and is turned on. When TR21 is turned on, C32 is discharged, and IC1 terminal 2 ($\overline{\text{Stop}}$) becomes ground potential through D24. This releases the deck from the recording mode and the stop mode is effected.

   This operation takes place before the amplifier circuit stops and therefore the click noise is cut out.

2. THE SAMPLE AND HOLD SYSTEM SERVO MOTOR (SCM-200) OPERATION

1) Servo signals generally created proportionately to the number of revolutions of the motor are shown either as frequency deviations or voltage deflections. The motor employed in GX-635D uses frequency deviation unaffected by time constants, etc., of the load circuit as input signal to the motor drive circuit through pulse width conversion.

   This pulse width varies proportionately to the deviations in the number of motor rotations. The deviation is detected, converted to a voltage value, is held at that voltage until the next servo signal pulse, and then impressed into the motor drive circuit.

   Meanwhile, since it requires a holding circuit and because 112 pulse are generated for each motor rotation, time constants of circuits coming before the Sample and Hold circuit can be greatly reduced compared to the conventional voltage deflection detection system.

   For the reasons above, it features quick response to motor revolutions, minimum influence by temperature, and fewer chances of faulty mechanism. In addition, due to the inclusion of the servo voltage holding circuit, ripple content of the servo voltage holding circuit, ripple content of the servo voltage has been sharply reduced to result in a smooth and stable tape transport with a minimum of wow & flutter.

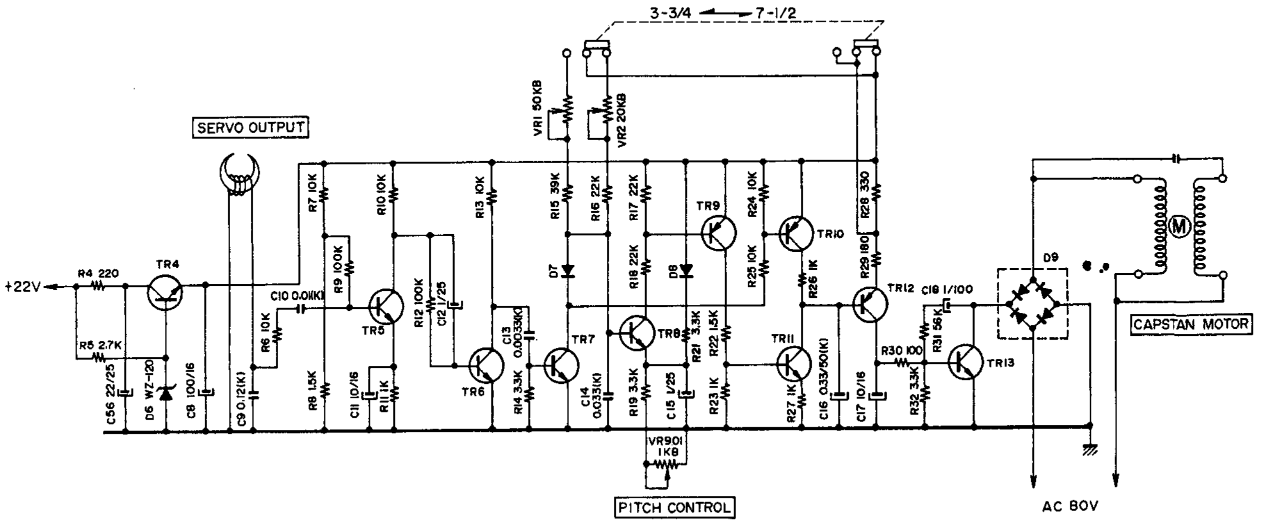

3-3/4 ⟵ 7-1/2
SERVO OUTPUT
+22V
R4 220
TR4
R5 2.7K
C56 22/25
D6 WZ-120
C8 100/16
C9 0.12(K)
R6 10K
C10 0.01(K)
R7 10K
R8 1.5K
R9 100K
TR5
R10 10K
C11 10/16
R11 1K
R12 100K
C12 1/25
TR6
R13 10K
C13 0.0033(K)
R14 3.3K
VR1 50KB
VR2 20KB
R15 39K
R16 22K
D7
TR7
C14 0.033(K)
R17 22K
R18 22K
D8
TR8
R19 3.3K
C15 1/25
R21 3.3K
R22 1.5K
R23 1K
VR901 1KB
PITCH CONTROL
TR9
R24 10K
R25 10K
TR10
R26 1K
TR11
R27 1K
C16 0.33/50(K)
R28 330
R29 180
TR12
C17 10/16
C18 1/100
R30 100
R31 56K
R32 3.3K
TR13
D9
M
CAPSTAN MOTOR
AC 80V

Fig. 6

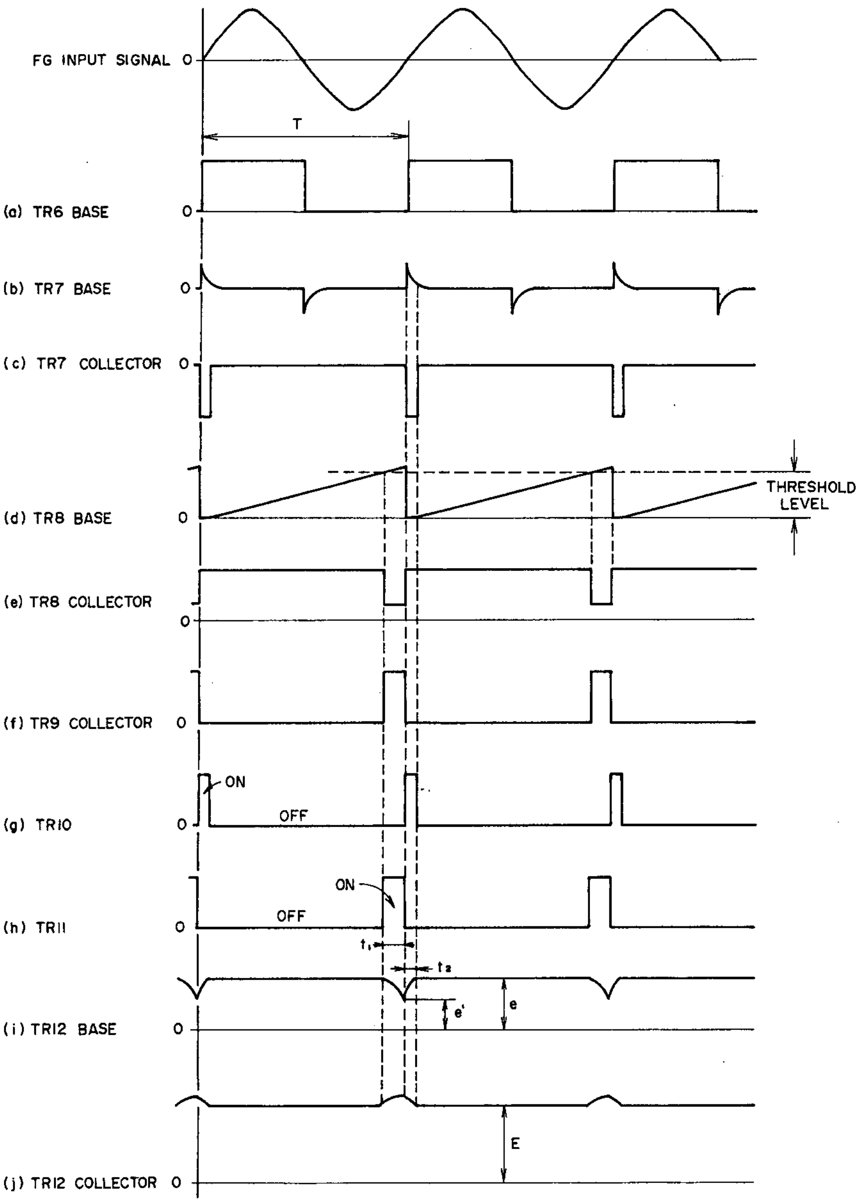

FG INPUT SIGNAL
0
T
(a) TR6 BASE
0
(b) TR7 BASE
0
(c) TR7 COLLECTOR
0
(d) TR8 BASE
0
THRESHOLD LEVEL
(e) TR8 COLLECTOR
0
(f) TR9 COLLECTOR
0
(g) TR10
0
ON
OFF
(h) TR11
0
ON
OFF
t₁
t₂
(i) TR12 BASE
0
e'
e
(j) TR12 COLLECTOR
0
E

Fig. 7

2) Explanation of the circuit operation (Refer to Figs. 6, 7)

The velocity signal obtained from the motor's frequency generator is shaped into a waveform in the period of "T" proportionate to the velocity as in (a) on collector TR6. This signal is differentiated and enters TR7 base. This makes TR7's collector output as in (c) and turns ON TR10 during the time of the negative pulse.

Meanwhile TR8 base is supplied with a waveform like (d) and when it reaches the threshold level, TR8 is turned on. A waveform (e) with pulse width "t_1" is obtained from the collector. During the time "T" that TR28 is ON, TR9 base electric potential decreases to turn ON.

Consequently, TR11 base electric potential increases and TR11 is also turned ON for the time "t_1".

When the period "T" varies with the velocity, the pulse width "t_1" varies according to TR8's threshold level. But when TR10 is on, it is constant due to the time constant. So that by using the period that TR is ON as the standard pulse, the pulse width "t_2" is constant regardless of the velocity.

(g) and (h) show the ON and OFF condition of TR10 and TR11. When the electric charge that was charged to C16 is discharged during the time TR11 is ON "t_1", a signal voltage of "e" proportionate to the velocity can be obtained. Next, with "e" as its basis, C16 is charged during the limited time of the standard pulse width "t_2", and by the charging voltage "e" the charging is stopped. The voltage is then held until the hext standard pulse.

This voltage "e" is supplied to the TR12 base and a servo signal "E" is obtained. This servo signal "E" controls TR13 and drives the motor.

As shown above, since "t_1" and "t_2" are small, servo signal ripples are made small and a near direct current servo signal is obtained. In addition, the time constants of the smoothing circuit can also be made small that phase lag factor can be minimized.

VI. MECHANISM ADJUSTMENT

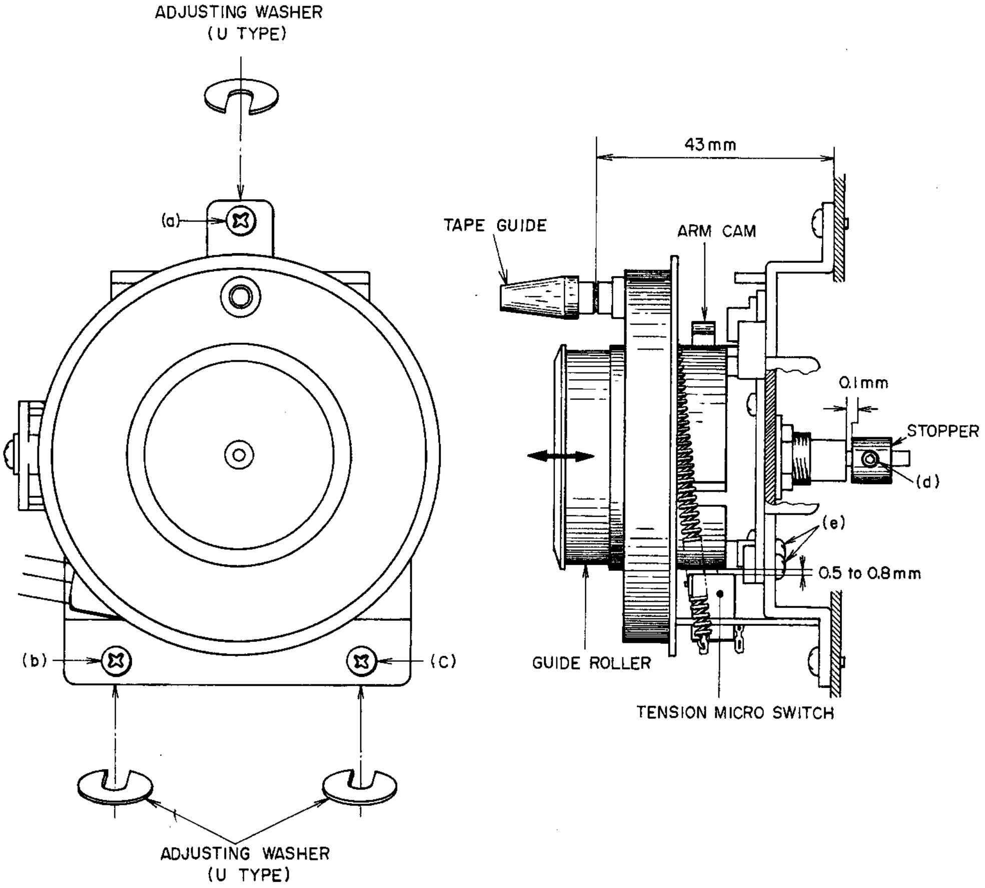

ADJUSTING WASHER (U TYPE)
(a)
(b)
(c)
ADJUSTING WASHER (U TYPE)
43mm
TAPE GUIDE
ARM CAM
0.1mm
STOPPER
(d)
(e)
0.5 to 0.8mm
GUIDE ROLLER
TENSION MICRO SWITCH

Fig. 8 Roller Block

1. GUIDE ROLLER LOOSE PLAY ADJUSTMENT (Refer to Fig. 8)

Adjust the stopper (roller pulley on the right) screw (d) so that the loose play gap is approximately 0.1 mm when the guide roller is moved as indicated by arrow mark in Fig. 8.

2. TENSION MICRO SWITCH POSITION ADJUSTMENT (Refer to Fig. 8)

Adjust the screws (e) so that the gap between the arm cam and the micro switch is approximately 0.5 to 0.8 mm. Check that the micro switch works and that the arm lock smoothly disengages.

3. ROLLER BLOCK HEIGHT ADJUSTMENT (Refer to Fig. 8)

Use the U type adjusting washers for screws (a), (b), and (c) to adjust the roller block height: the distance between the tape guide center to the chassis board should be 43 mm.

NOTE: Steps 1 and 3 also apply to the right guide roller.

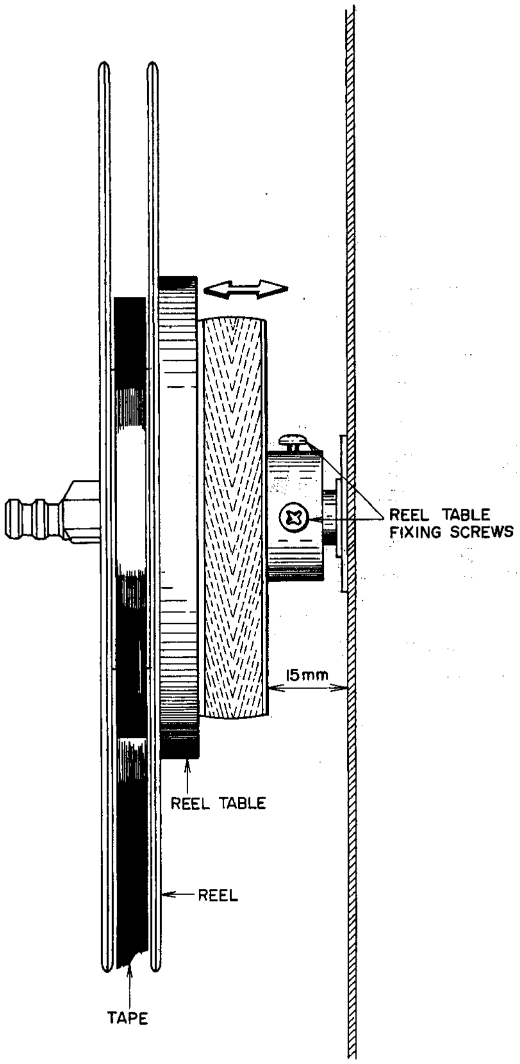

REEL TABLE FIXING SCREWS
15mm
REEL TABLE
REEL
TAPE

Fig. 9

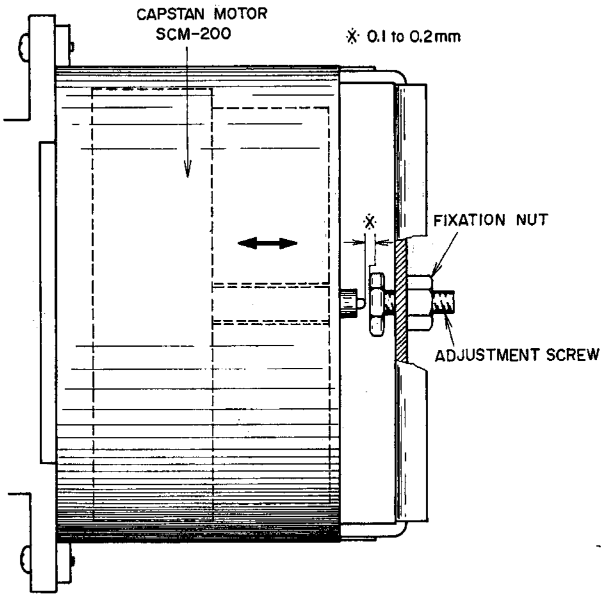

CAPSTAN MOTOR SCM-200
※ 0.1 to 0.2mm
※
FIXATION NUT
ADJUSTMENT SCREW

Fig. 10

4. REEL TABLE HEIGHT ADJUSTMENT (Refer to Fig. 9)

1) Temporarily screw in the fixing screws leaving a gap of 15 mm between the reel table and the chassis board.
2) Run the tape and adjust the height of the reel table so that the tape is taken up in the center of the reel. Tighten fixing screws.
Adjust the height of the right reel table at fast forward, of the left reel table at rewind.

5. CAPSTAN SHAFT LOOSE PLAY ADJUSTMENT (Refer to Fig. 10)

Adjust by turning Adjustment Screw to obtain a 0.1 to 0.2 mm degree of loose play when the capstan shaft is moved as indicated by the arrow mark. Tighten fixation nut to maintain optimum adjusted condition.

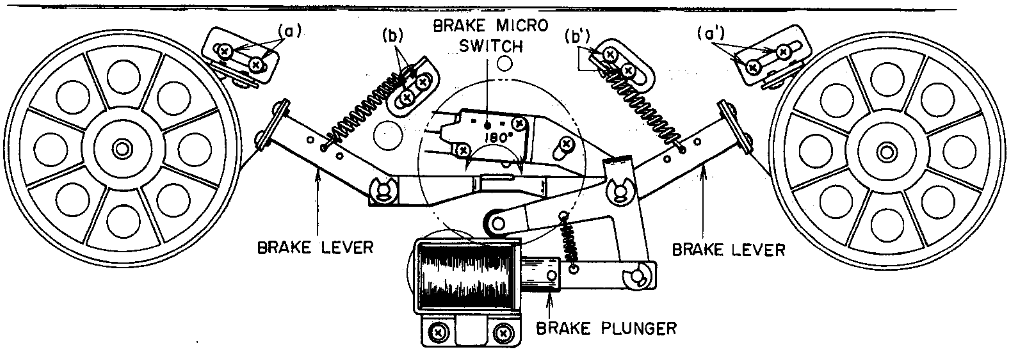

(a)
(b)
BRAKE MICRO SWITCH
(b')
(a')
180°
BRAKE LEVER
BRAKE LEVER
BRAKE PLUNGER

Fig. 11

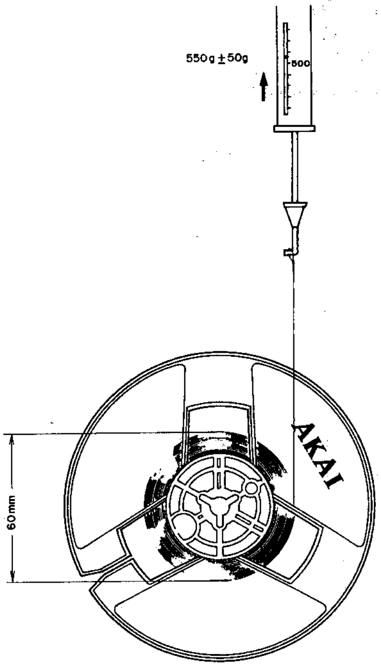

550g±50g
500
AKAI
60mm

Fig. 12

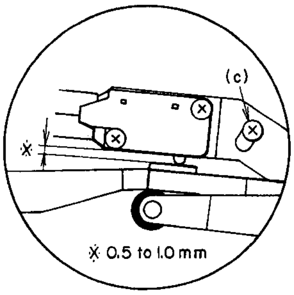


Fig. 13

6. BRAKE BAND POSITION ADJUSTMENT AND BRAKE TENSION ADJUSTMENT

(Refer to Figs. 11 to 13)

1) Adjust the brake lever to 180° position by loosening the screws (a) and (a').
2) Work the brake plunger to check that the brake band is not slanted.
3) Adjust the position of the part with screws (b) and (b') to obtain a brake tension of 550 ±50g on both brakes at stop mode.
   (Use a 1000g spring gauge for a reel with 60 mm diameter of tape.)
   In case the specified brake tension cannot be obtained, connect the springs to the other holes on the brake lever and adjust.
4) By working the brake plunger with a finger, adjust the position of the microswitch screw (c) so that the gap between the brake lever and the microswitch body is 0.5 to 1.0 mm.

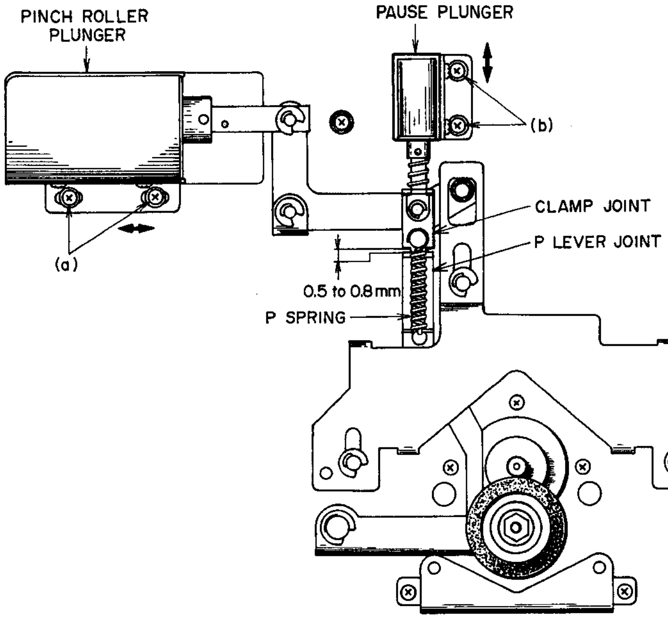

PINCH ROLLER PLUNGER
PAUSE PLUNGER
(b)
CLAMP JOINT
P LEVER JOINT
(a)
0.5 to 0.8mm
P SPRING

Fig. 14

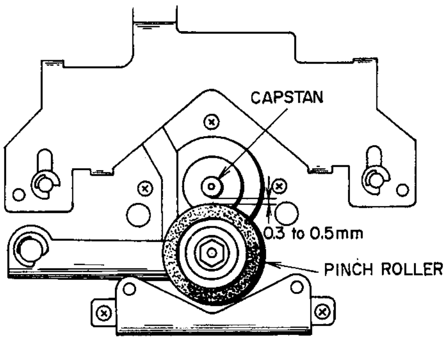

CAPSTAN
0.3 to 0.5mm
PINCH ROLLER

Fig. 15

7. PINCH ROLLER POSITION ADJUSTMENT (Refer to Fig. 14)

At the play mode, the gap between the clamp joint and the P lever joint should be 0.5 to 0.8 mm. Adjust the pinch roller plunger position with screws (a).

8. PAUSE PLUNGER POSITON ADJUSTMENT (Refer to Figs. 14, 15)

At the pause mode, the gap between the capstan and the pinch roller should be 0.3 to 0.5 mm. Adjust the pause plunger position with screws (b).

9. PINCH ROLLER PRESSURE ADJUSTMENT

Connect a 2 kg spring gauge to the pinch roller fixing screws. Pull down the pinch roller and then let it slowly move back. Check that the spring gauge reads 1.2 kg ±200g at the moment the pinch roller touches the capstan and starts rolling. If it reads otherwise, replace the P spring (See Fig. 14).

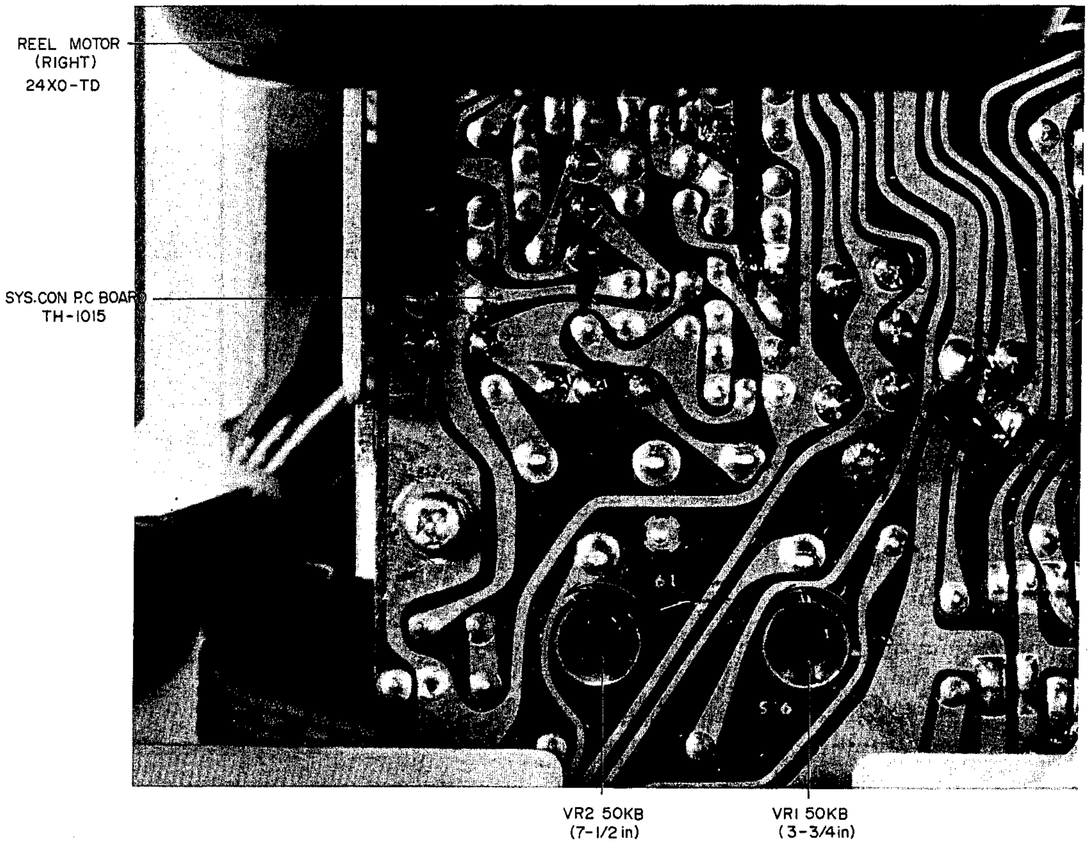

REEL MOTOR (RIGHT) 24XO-TD
SYS.CON P.C BOARD TH-1015
VR2 50KB (7-1/2 in)
VR1 50KB (3-3/4in)

Fig. 16

10. TAPE SPEED ADJUSTMENT (Refer to Fig. 16)

Set the Tape Speed Switch to 7-1/2 ips and playback the 1,000 Hz, 7-1/2 Test tape.

Connect a frequency counter to LINE OUT and adjust VR2 50 kB until the counter reads 1,000 Hz ±0.5%.

Next, set the Tape Speed Switch to 3-3/4 ips and adjust VR1 50 kB until the frequency counter reads 500 Hz ±0.5%.

VII. HEAD ADJUSTMENT

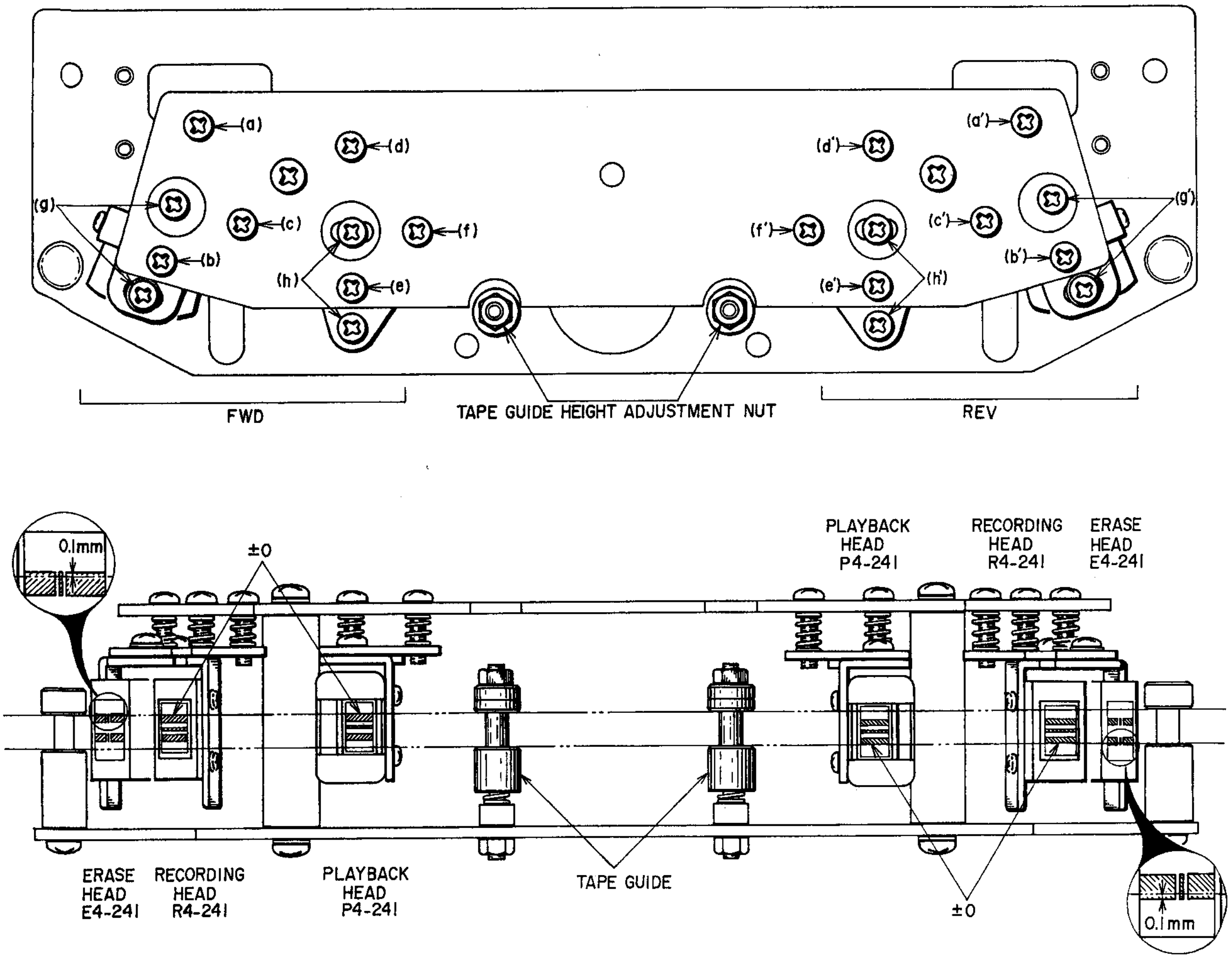

(a)
(d)
(g)
(c)
(f)
(b)
(h)
(e)
(d')
(a')
(f')
(c')
(g')
(b')
(e')
(h')
FWD
TAPE GUIDE HEIGHT ADJUSTMENT NUT
REV
0.1mm
±0
PLAYBACK HEAD P4-241
RECORDING HEAD R4-241
ERASE HEAD E4-241
ERASE HEAD E4-241
RECORDING HEAD R4-241
PLAYBACK HEAD P4-241
TAPE GUIDE
±0
0.1mm

Fig. 17

Step	Adjustment Item	Test Tape Supply Signal	Mode	Adjustment Point	Remarks
1	Tape Guide Height	Optional	FWD	Tape Guide Height Adjustment Nut	1) Adjust so that tape travels smoothly and does not twist. 2) Do not thread tape over tension arm.
2	FWD Recording Head Height	Optional	FWD	(a) (b) (c)	Upper edges of Left Ch. head core and tape are the same height.
3	FWD Erase Head Height Confirmation	Optional	FWD		Upper edge of Left Ch. head core is 0.1 mm higher than upper edge of tape.
4	FWD Playback Head Height	Optional	FWD	(d) (e) (f)	Upper edges of Left Ch. head core and tape are the same height.
5	FWD Playback Head Azimuth Alighment	8,000 Hz 3-3/4 ips Test Tape	FWD	(f)	Maximum output, both channels.
6	FWD Playback Head Angle Alignment	8,000 Hz 3-3/4 ips Test Tape	FWD	(h)	Adjust head gap surface so that there is no change in output level when tension is applied to the supply reel side.
7	FWD Recording Head Azimuth Alignment	Scotch #211 Tape 15,000 Hz −20 dBm	REC	(c)	Maximum output, both channels.
8	FWD Recording Head Angle Alignment	Scotch #211 Tape 15,000 Hz −20 dBm	REC	(g)	Adjust head gap surface so that there is no change in output level when tension is applied to the supply reel side.

Chart-4

NOTES:

1. As perfect head adjustments are vital to tape deck performance, be sure that these adjustments are carried out properly.
2. Be careful not to use a magnetized driver or other magnetized tools in the vicinity of the heads.
3. Use only new tape as level variation is likely to occur when using old tape.
4. Demagnetize heads with head demagnetizer before and after head adjustment.
5. Set tape speed to 7-1/2 ips.
6. Adjustments outlined in Chart 4 are only for FWD side heads. However, adjustments for REV side heads are exactly the same.

VIII. AMPLIFIER ADJUSTMENT

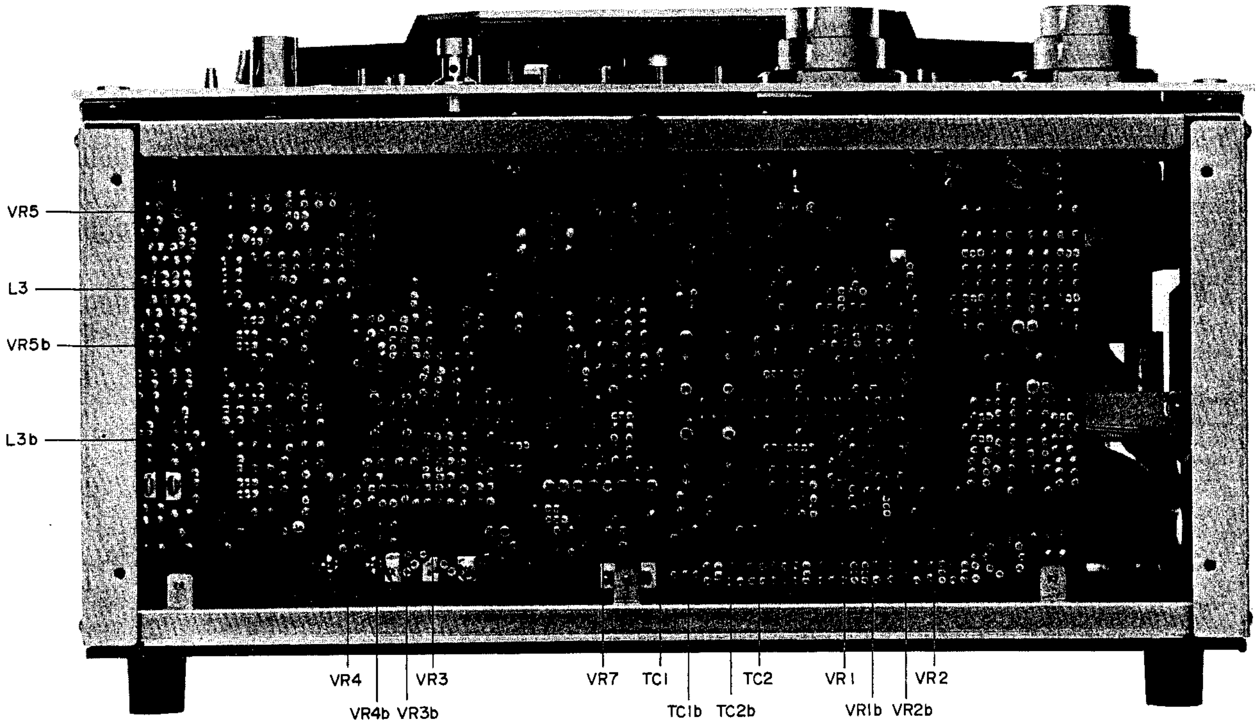

VR5
L3
VR5b
L3b
VR4
VR3
VR4b VR3b
VR7
TC1
TC2
TC1b TC2b
VR1
VR2
VR1b VR2b

Fig. 18

VR3	50 kB	FWD Playback Level Adjustment
VR4	50 kB	REV Playback Level Adjustment
VR5	1 kB	VU Meter Sensitivity Adjustment
VR2	10 kB	FWD Recording Level Adjustment
VR1	10 kB	REV Recording Level Adjustment
TC2	80 PF	FWD Frequency Response Adjustment (3-3/4 in)
TC1	80 PF	REV Frequency Response Adjustment (3-3/4 in)
VR7	30 kB	Frequency Response Adjustment (7-1/2 in)
L3		Bias Filter Adjustment

*** The letter "b" following an adjustment part number indicates "RIGHT CHANNEL".**

Step	Adjustment Item	Test Tape Supply Signal	Mode	Adjustment Point	Result	Remarks
1	FWD Playback Level	700Hz 7-1/2 ips 0VU Test Tape	FWD	VR3 50 kB	0±0.5dBm (0.775V)	
2	REV Playback Level	700Hz 7-1/2 ips 0VU Test Tape	REV	VR4 50 kB	0±0.5dBm (0.775V)	
3	VU Meter Sensitivity	700Hz 7-1/2 ips 0VU Test Tape	FWD	VR5 1 kB	0 VU indication	
4	FWD Recording Level	Scotch #211 Tape 1,000 Hz 0 dBm Recording	FWD-REC	VR2 10 kB	0±0.5dBm (0.775V)	
5	REV Recording Level	Scotch #211 Tape 1,000 Hz 0 dBm Recording	REV-REC	VR1 10 kB	0±0.5dBm (0.775V)	
6	FWD Frequency Response (3-3/4 ips)	Scotch #211 Tape 1.5kHz, 15kHz −20dBm Recording	FWD-REC	TC2	1.5 kHz, 15 kHz flat	Tape Speed 3-3/4 ips. Recheck Recording Level.
7	REV Frequency Response (3-3/4 ips)	Scotch #211 Tape 1.5kHz, 15kHz −20dBm Recording	REV-REC	TC1	1.5 kHz, 15 kHz flat	Tape Speed 3-3/4 ips. Recheck Recording Level.
8	Frequency Response (7-1/2 ips)	Scotch #211 Tape 1.5kHz, 15kHz −20dBm Recording	FWD-REC	VR7 30 kB	1.5 kHz, 15 kHz flat	Tape Speed 7-1/2 ips. Recheck Recording Level.
9	FWD Distortion Confirmation	Scotch #211 Tape 1,000Hz 0 dBm Recording	FWD-REC		Less than 0.5%	See NOTE 4
10	REV Distortion Confirmation	Scotch #211 Tape 1,000 Hz, 0 dBm Recording	REV-REC		Less than 0.5%	See NOTE 4
11	Bias Filter		REC	L3	Less than −30 dB	Mic, Line Volume at Max. See NOTE 5.

Chart-5

NOTES:
1. Output Level Control should be at maximum.
2. Except for Steps 6 and 7, set Tape Speed to 7-1/2 ips.
3. Set Tape Selector Switch to Low Noise position.
4. If it does not comply with the specifications, repeat Steps 6 and 7, and re-adjust.
5. Unless the core is moved intentionally this adjustment is not necessary.

IX. DC RESISTANCE OF VARIOUS COILS

Part	Designation	DC Resistance
Main Motor	SCM-200	Between BLU-RED: 110 ohms Between YLW-BRN: 170 ohms Pick-up Coil: 665 ohms
Reel Motor	24X0-TD	Between BLU-RED: 30 ohms Between YLW-BRN: 157 ohms
Pinch Roller Plunger	1664TLT	700 ohms ±10%
Brake Plunger, REV Plunger	1240TLT	600 ohms ±10%
Pause Plunger	TDS-07A	600 ohms ±10%
Relay	FRL-264	650 ohms ±15%
Relay	BR211	1,280 ohms ±10%
Relay	LAB2NS	1,750 ohms ±10%
Erase Head	E4-241	2.1 ohms
Recording Head	R4-241	5.9 ohms
Playback Head	P4-241	219 ohms

Chart-6

X. CLASSIFICATION OF VARIOUS P.C BOARDS

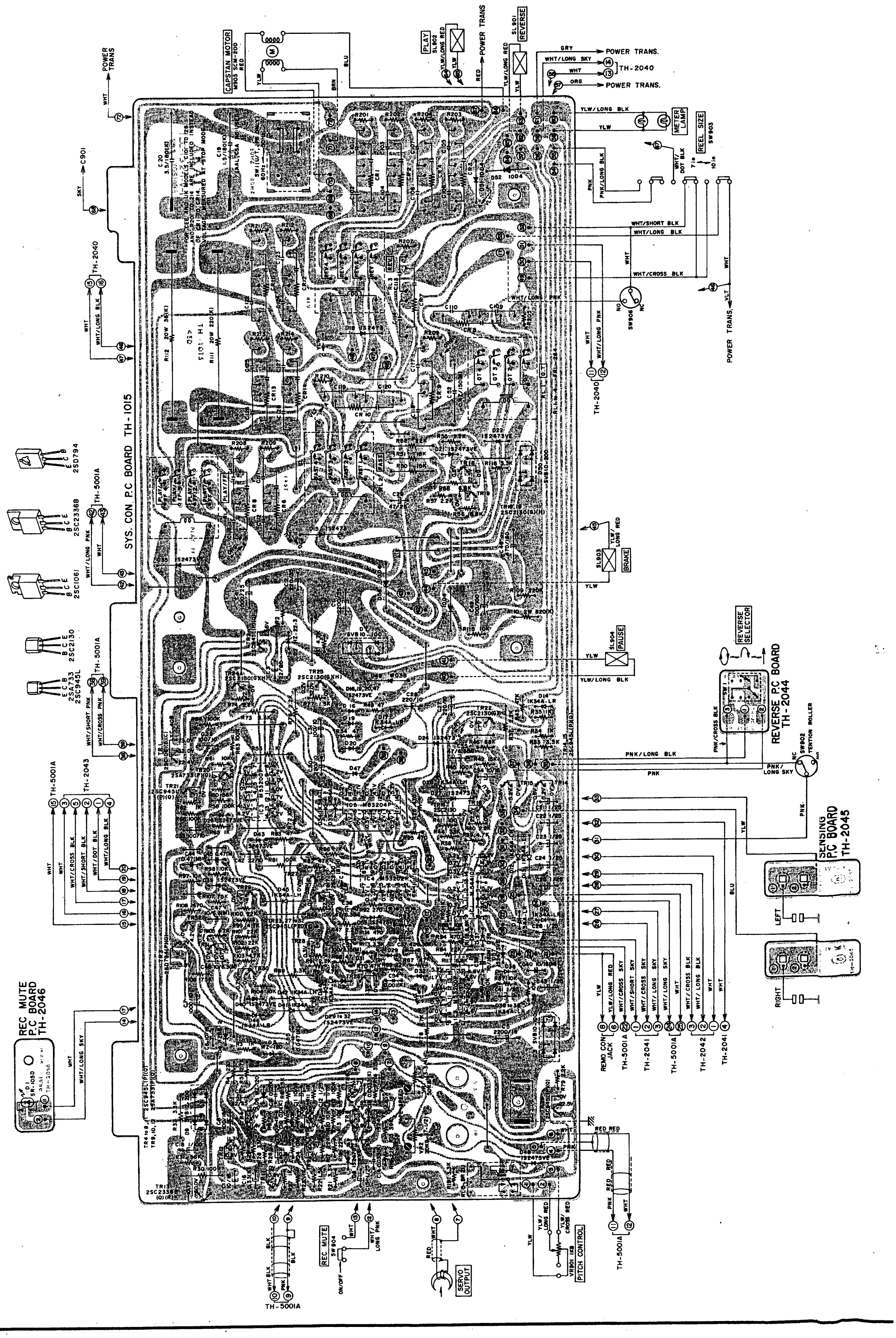
1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

P.C Board Title	P.C Board Number
Sys. Con P.C Board	TH-1015
Pre Amp P.C Board	TH-5001A
Rec LED P.C Board	TH-5001B
Volume P.C Board	TH-5002
Fuse P.C Board	TH-2040
Operation P.C Board (A)	TH-2041
Operation P.C Board (B)	TH-2042
Direction P.C Board	TH-2043
Reverse P.C Board	TH-2044
Sensing P.C Board	TH-2045
Rec Mute P.C Board	TH-2046

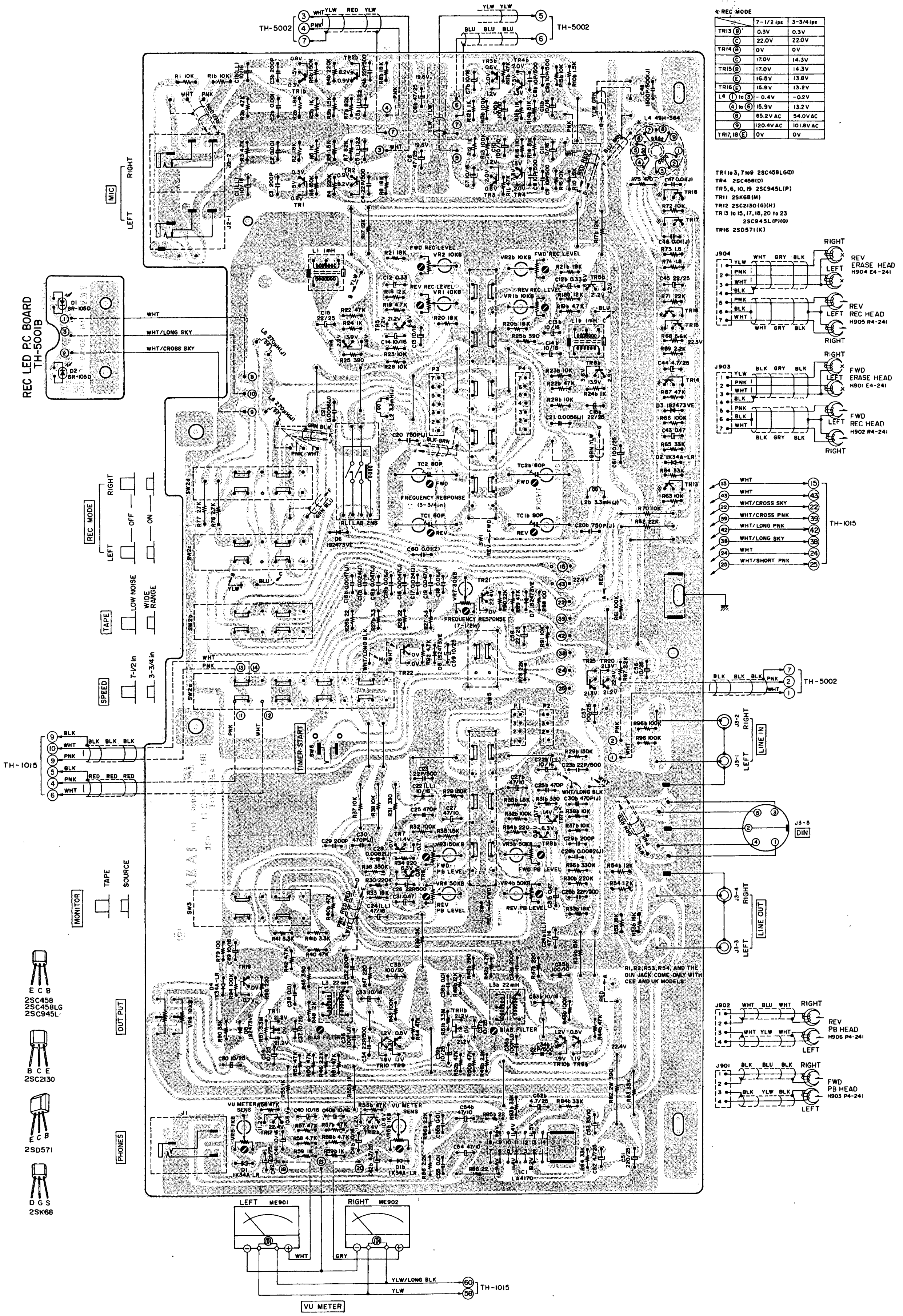
Chart-7

2. COMPOSITION OF VARIOUS P.C BOARDS

1) SYS. CON P.C BOARD TH-1015 (4ED), REVERSE P.C BOARD TH-2044, SENSING P.C BOARD TH-2045 & REC MUTE P.C BOARD TH-2046


SYS. CON P.C BOARD TH-1015
CAPSTAN MOTOR
M903 SCM-200
RED
BLU
BRN
YLW
PLAY
SL902
YLW/LONG RED
POWER TRANS
SL901
REVERSE
GRY
POWER TRANS.
WHT/LONG SKY
TH-2040
WHT
ORG
POWER TRANS.
YLW/LONG BLK
YLW
METER LAMP
REEL SIZE
SW903
PNK/LONG BLK
WHT/SHORT BLK
WHT/LONG BLK
WHT/CROSS BLK
WHT/LONG PNK
SW906
TH-2040
POWER TRANS.
VLT
SKY
C901
TH-2040
WHT/LONG BLK
2SD794
2SC2336B
2SC1061
2SC2130
2SA733
2SC945L
TH-5001A
WHT/LONG PNK
WHT/SHORT PNK
WHT/CROSS PNK
TH-2043
WHT/CROSS BLK
WHT/SHORT BLK
WHT/DOT BLK
REC MUTE
P.C BOARD
TH-2046
WHT/LONG SKY
SL903
BRAKE
YLW/LONG RED
SL904
PAUSE
YLW/LONG BLK
REVERSE SELECTOR
REVERSE P.C BOARD
TH-2044
PNK/CROSS BLK
PNK/LONG BLK
PNK
PNK/LONG SKY
SW902
TENTION ROLLER
SENSING P.C BOARD
TH-2045
LEFT
RIGHT
REMO.CON JACK
TH-5001A
TH-2041
TH-5001A
TH-2042
TH-2041
RED
YLW/LONG RED
YLW/CROSS RED
VR901 1KB
PITCH CONTROL
TH-5001A
BLK
WHT
PNK
REC MUTE
SW904
ON/OFF
WHT/LONG PNK
SERVO OUTPUT
TH-5001A

2) PRE AMP P.C BOARD TH-5001A (2ED) & REC LED P.C BOARD TH-5001B

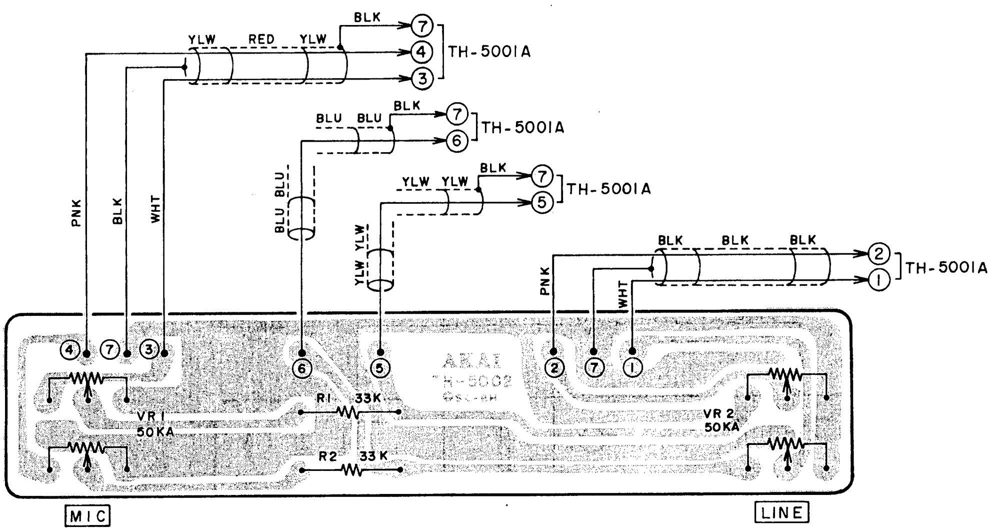

TH-5002
TH-1015
REC LED P.C BOARD TH-5001B
MIC
RIGHT
LEFT
REC MODE
OFF
ON
TAPE
LOW NOISE
WIDE RANGE
SPEED
7-1/2 in
3-3/4 in
MONITOR
TAPE
SOURCE
OUT PUT
PHONES
TIMER START
FWD REC LEVEL
REV REC LEVEL
FREQUENCY RESPONSE (3-3/4 in)
FREQUENCY RESPONSE (7-1/2in)
FWD PB LEVEL
REV PB LEVEL
BIAS FILTER
VU METER SENS
LINE IN
LINE OUT
DIN
J3-5
REV ERASE HEAD H904 E4-241
REV REC HEAD H905 R4-241
FWD ERASE HEAD H901 E4-241
FWD REC HEAD H902 R4-241
REV PB HEAD H906 P4-241
FWD PB HEAD H903 P4-241
J904
J903
J902
J901
LEFT ME901
RIGHT ME902
VU METER
R1, R2, R53, R54, AND THE DIN JACK COME ONLY WITH CEE AND UK MODELS.
E C B
2SC458
2SC458LG
2SC945L
B C E
2SC2130
E C B
2SD571
D G S
2SK68

※ REC MODE

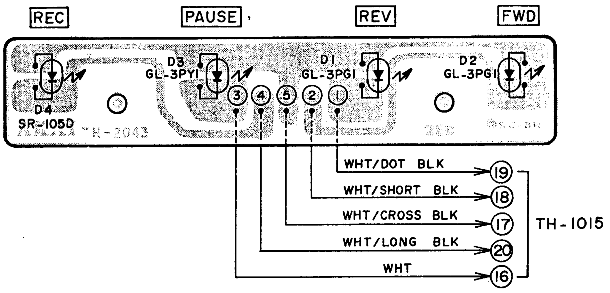
	7-1/2 ips	3-3/4 ips
TR13 Ⓑ	0.3V	0.3V
Ⓒ	22.0V	22.0V
TR14 Ⓑ	0V	0V
Ⓒ	17.0V	14.3V
TR15 Ⓑ	17.0V	14.3V
Ⓔ	16.8V	13.8V
TR16 Ⓔ	15.9V	13.2V
L4 ① to ③	-0.4V	-0.2V
④ to ⑥	15.9V	13.2V
⑧	65.2V AC	54.0V AC
⑨	120.4V AC	101.8V AC
TR17, 18 Ⓔ	0V	0V

TR1 to 3, 7 to 9 2SC458LG(D)
TR4 2SC458(D)
TR5, 6, 10, 19 2SC945L(P)
TR11 2SK68(M)
TR12 2SC2130(G)(H)
TR13 to 15, 17, 18, 20 to 23 2SC945L(P)(Q)
TR16 2SD571(K)

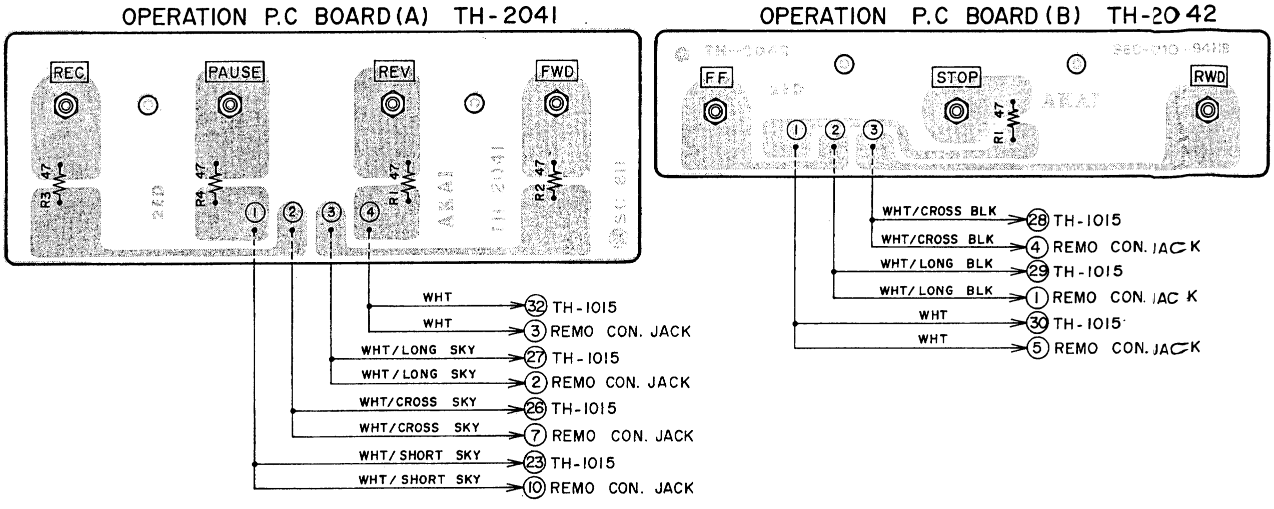
3) VOLUME P.C BOARD TH-5002


BLK
YLW RED YLW
⑦
④
③
TH-5001A
BLU BLU
BLK
⑦
⑥
TH-5001A
YLW YLW
BLK
⑦
⑤
TH-5001A
PNK
BLK
WHT
BLU BLU
YLW YLW
BLK BLK BLK
PNK
WHT
②
①
TH-5001A
④ ⑦ ③
⑥
⑤
AKAI
TH-5002
② ⑦ ①
VR1
50KA
R1 33K
R2 33K
VR2
50KA
MIC
LINE

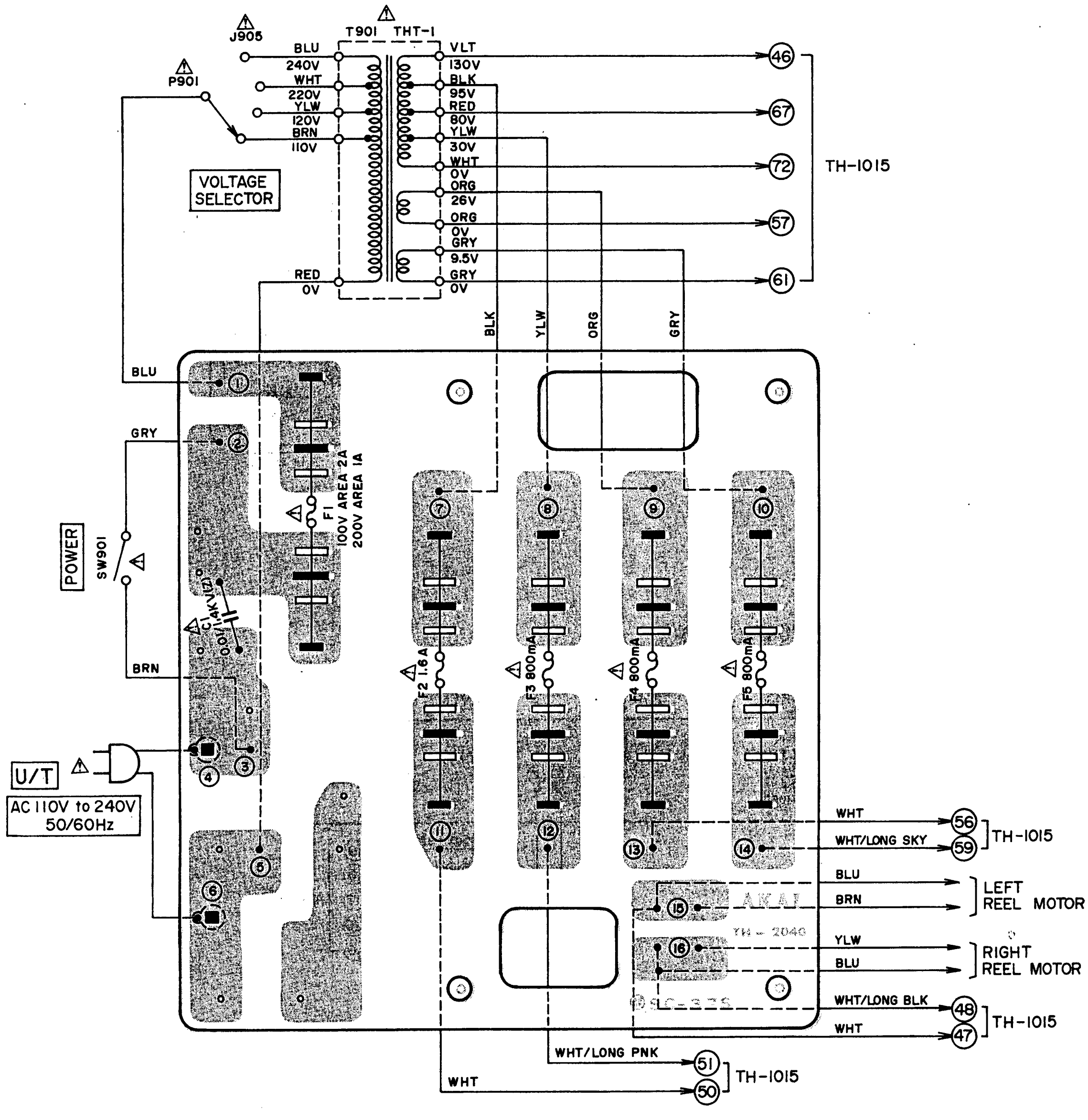
4) DIRECTION P.C BOARD TH-2043 (2ED)


REC
PAUSE
REV
FWD
D3
GL-3PY1
D1
GL-3PG1
D2
GL-3PG1
D4
SR-105D
TH-2043
③ ④ ⑤ ② ①
WHT/DOT BLK
⑲
WHT/SHORT BLK
⑱
WHT/CROSS BLK
⑰
WHT/LONG BLK
⑳
WHT
⑯
TH-1015

5) OPERATION P.C BOARD (A) TH-2041 (2ED) & OPERATION P.C BOARD (B) TH-2042 (2ED)


OPERATION P.C BOARD(A) TH-2041
REC
PAUSE
REV
FWD
R3 47
R4 47
R1 47
R2 47
AKAI
TH 2041
① ② ③ ④
WHT
㉜ TH-1015
WHT
③ REMO CON. JACK
WHT/LONG SKY
㉗ TH-1015
WHT/LONG SKY
② REMO CON. JACK
WHT/CROSS SKY
㉖ TH-1015
WHT/CROSS SKY
⑦ REMO CON. JACK
WHT/SHORT SKY
㉓ TH-1015
WHT/SHORT SKY
⑩ REMO CON. JACK
OPERATION P.C BOARD(B) TH-2042
FF
STOP
RWD
R1 47
AKAI
① ② ③
WHT/CROSS BLK
㉘ TH-1015
WHT/CROSS BLK
④ REMO CON. JACK
WHT/LONG BLK
㉙ TH-1015
WHT/LONG BLK
① REMO CON. JACK
WHT
㉚ TH-1015
WHT
⑤ REMO CON. JACK

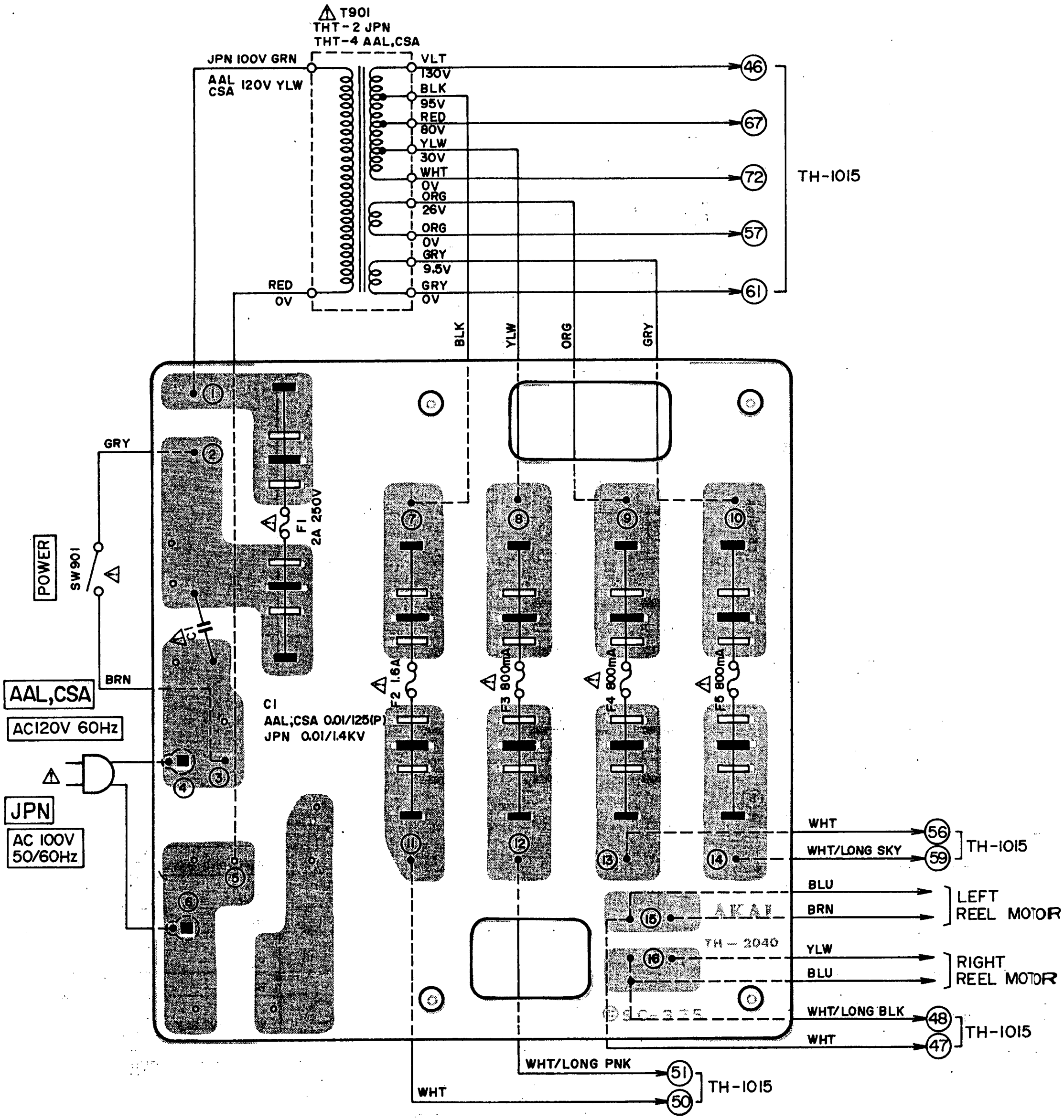
6) FUSE P.C BOARD TH-2040 (U/T)


J905
P901
T901 THT-1
BLU
240V
WHT
220V
YLW
120V
BRN
110V
RED
0V
VOLTAGE SELECTOR
VLT
130V
BLK
95V
RED
80V
YLW
30V
WHT
0V
ORG
26V
ORG
0V
GRY
9.5V
GRY
0V
㊻
㊿
(67)
(72)
(57)
(61)
TH-1015
BLK
YLW
ORG
GRY
BLU
GRY
BRN
POWER
SW901
F1 100V AREA 2A 200V AREA 1A
C 0.01(1.4KV)(Z)
U/T
AC 110V to 240V 50/60Hz
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
F2 1.6A
F3 800mA
F4 800mA
F5 800mA
AKAI
TH-2040
WHT
WHT/LONG SKY
(56)
(59)
TH-1015
BLU
BRN
LEFT REEL MOTOR
YLW
BLU
RIGHT REEL MOTOR
WHT/LONG BLK
WHT
㊽
㊼
TH-1015
WHT/LONG PNK
WHT
(51)
㊿
TH-1015

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

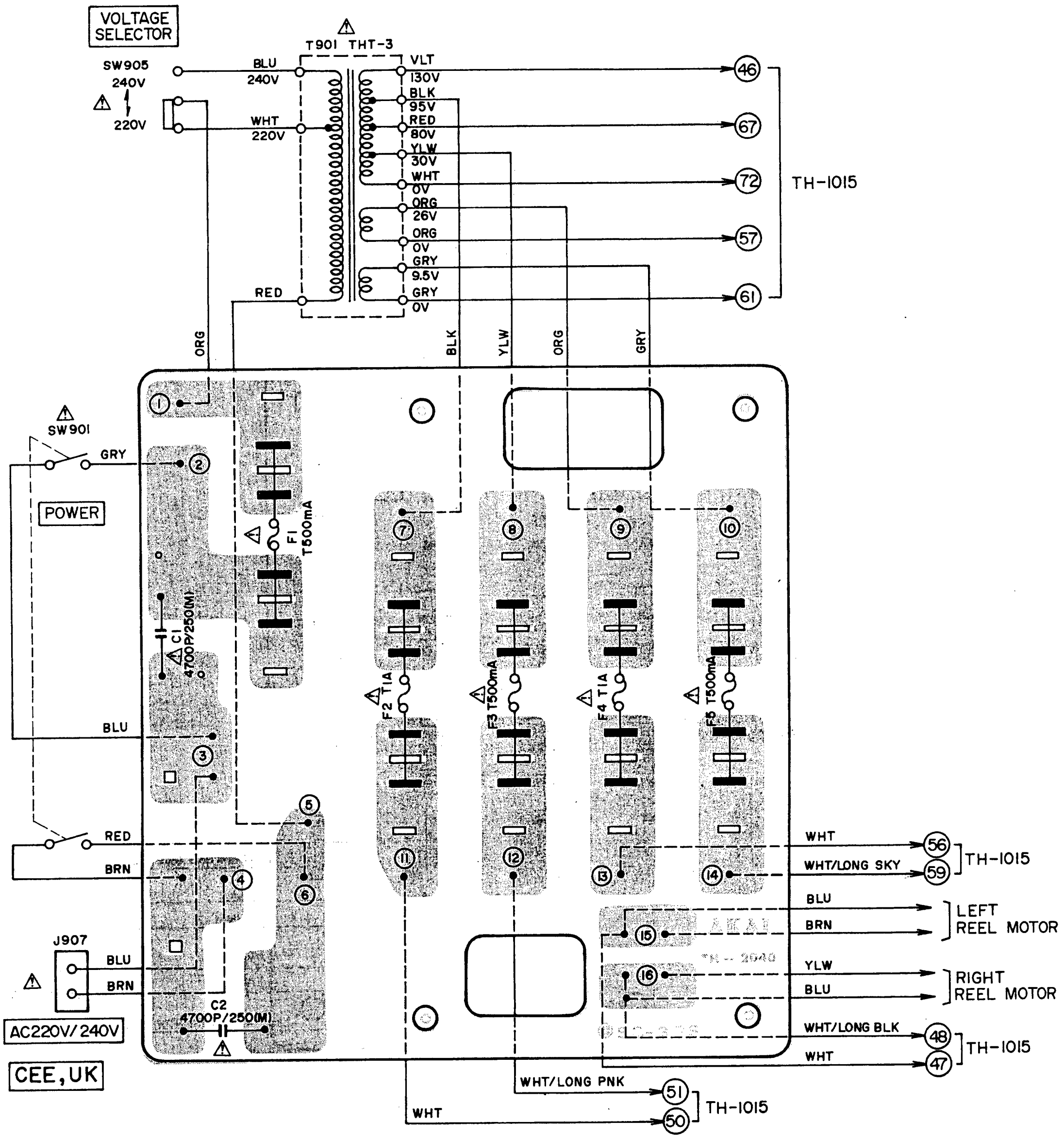
7) FUSE P.C BOARD TH-2040 (JPN, AAL, CSA)


⚠ T901
THT-2 JPN
THT-4 AAL,CSA
JPN 100V GRN
AAL CSA 120V YLW
RED
0V
VLT
130V
BLK
95V
RED
80V
YLW
30V
WHT
0V
ORG
26V
ORG
0V
GRY
9.5V
GRY
0V
BLK
YLW
ORG
GRY
⑯
⑯
⑦
⑦
⑥
TH-1015
GRY
BRN
POWER
SW901
AAL,CSA
AC120V 60Hz
JPN
AC 100V
50/60Hz
F1
2A 250V
C1
AAL;CSA 0.01/125(P)
JPN 0.01/1.4KV
F2 1.6A
F3 800mA
F4 800mA
F5 800mA
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
AKAI
TH-2040
WHT
WHT/LONG SKY
(56)
(59)
TH-1015
BLU
BRN
LEFT REEL MOTOR
YLW
BLU
RIGHT REEL MOTOR
WHT/LONG BLK
WHT
(48)
(47)
TH-1015
WHT/LONG PNK
WHT
(51)
(50)
TH-1015

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURTE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

8) FUSE P.C BOARD TH-2040, (CEE, UK)


VOLTAGE SELECTOR
SW905
240V
220V
T901 THT-3
BLU 240V
WHT 220V
RED
VLT
130V
BLK
95V
RED
80V
YLW
30V
WHT
0V
ORG
26V
ORG
0V
GRY
9.5V
GRY
0V
46
67
72
57
61
TH-1015
ORG
BLK
YLW
ORG
GRY
SW901
GRY
POWER
BLU
RED
BRN
J907
BLU
BRN
AC220V/240V
CEE,UK
F1 T500mA
C1 4700P/250(M)
C2 4700P/250(M)
F2 T1A
F3 T500mA
F4 T1A
F5 T500mA
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
WHT
WHT/LONG SKY
56
59
TH-1015
BLU
BRN
LEFT REEL MOTOR
YLW
BLU
RIGHT REEL MOTOR
WHT/LONG BLK
WHT
48
47
TH-1015
WHT/LONG PNK
WHT
51
50
TH-1015
AKAI
TH-2040

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

MEMO

MEMO

MEMO

MEMO

SECTION 2

PARTS LIST

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   (2) PRE AMP P.C BOARD (TH-5001A) BLOCK........59
   (3) VOL. P.C BOARD (TH-5002) BLOCK............59
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Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

HOW TO USE THIS PARTS LIST

1. This parts list is compiled by various individual blocks based on assembly process.
2. When ordering parts, please describe parts number, serial number, and model number in detail.
3. How to read List

The reference number corresponds with illustration or photo number of that particular parts list.

This number corresponds with the Figure Number.

This number corresponds with the individual parts index number in that figure.

A small "x" indicates the inability to show that particular part in the Photo or Illustration.

12-115x

Schematic Diagram Number of individual manufactured part.
(not required for parts order)

Ref. No.	Parts No.	Description	Schematic No.
		FLYWHEEL BLOCK #13	
12-115x	800425	Flywheel Block Assy. Comp.	RDG #13
12-116	244506	Flywheel Only	RD-233
12-117x	244754	Felt, Flywheel	RD-275
12-118	251324	Main Metal Case	RD-236
12-119	253080	Main Metal	RD-237

4. The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of Components of the Schematic Diagram or Service Manual.
5. Please utilize separate "Common List for Service Parts" for Resistor Parts orders.
6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown, on the Electrical Parts Table of P.C. Board.
7. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List.
   It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index. (meaning of ref. no. outlined in Item 3 above).
8. Utilize separate "Price List for Parts" to determine unit price. The most simple method of finding parts Price is to utilize the reference number.

CAUTION:
1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Service Manual (Basic Parts List) may be partially changed, please use this parts list for all future· reference.

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

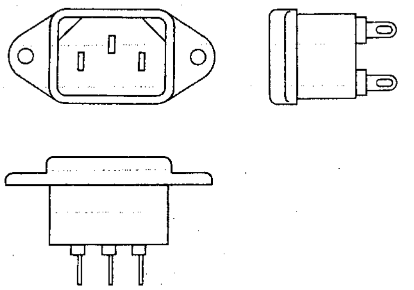
AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

AC INLET SYSTEM

This model is equipped with an AC INLET SYSTEM. Please refer to the AC INLET SYSTEM CHART below for the specific type. By the AC INLET SYSTEM, AC (mains) cord can be connected to and disconnected from the model because the model is provided with socket exclusively for AC (mains) cord on its main body.
Please note, however, that certain models are not equipped with this system and has a built-in AC (mains) cord as before.

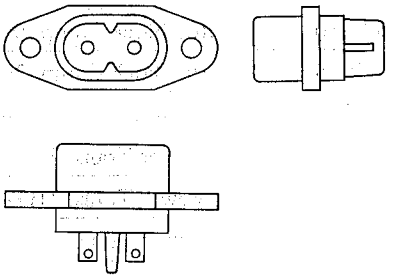
AC INLET SYSTEM CHART

CLASS I

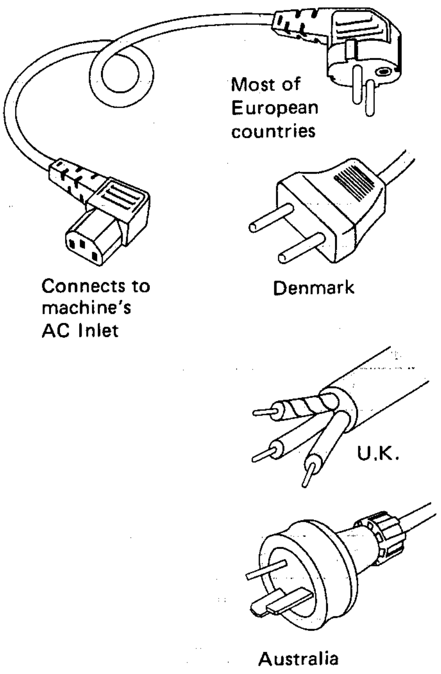


CLASS II

⧈ This mark indicating double insulation will be attached to machine's rear panel



Picture 1
AC INLET
to be
installed
on machines


Most of
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Connects to
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Denmark
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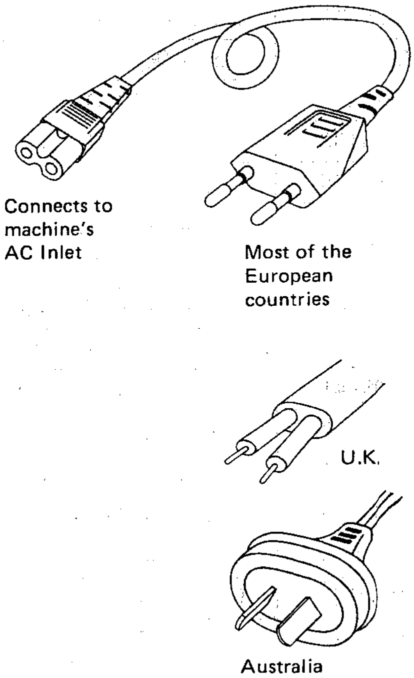
differs according
to wall socket


Connects to
machine's
AC Inlet
Most of the
European
countries
U.K.
Australia
differs according
to wall socket

Picture 2
AC (mains)
cord

Parts List for AC (mains) Cord Set

Standard		Description	Type of AC Inlet	Parts No.
Class I	CEE	Cord Set CEE (3 cores)	3P	EW302993
	BEAB	Cord Set BEAB (3 cores)	3P	EW302994
	SAA	Cord Set SAA (3 cores)	3P	EW302996
	U/T	Cord Set U/T (3 cores)	3P	EW302646
Class II	CEE	Cord Set CEE (2 cores)	2P	EW638144
	BEAB	Cord Set BEAB (2 cores)	2P	EW302995
	SAA	Cord Set SAA (2 cores)	2P	EW302991
	U/T	Cord Set U/T (2 cores)	2P	EW302899

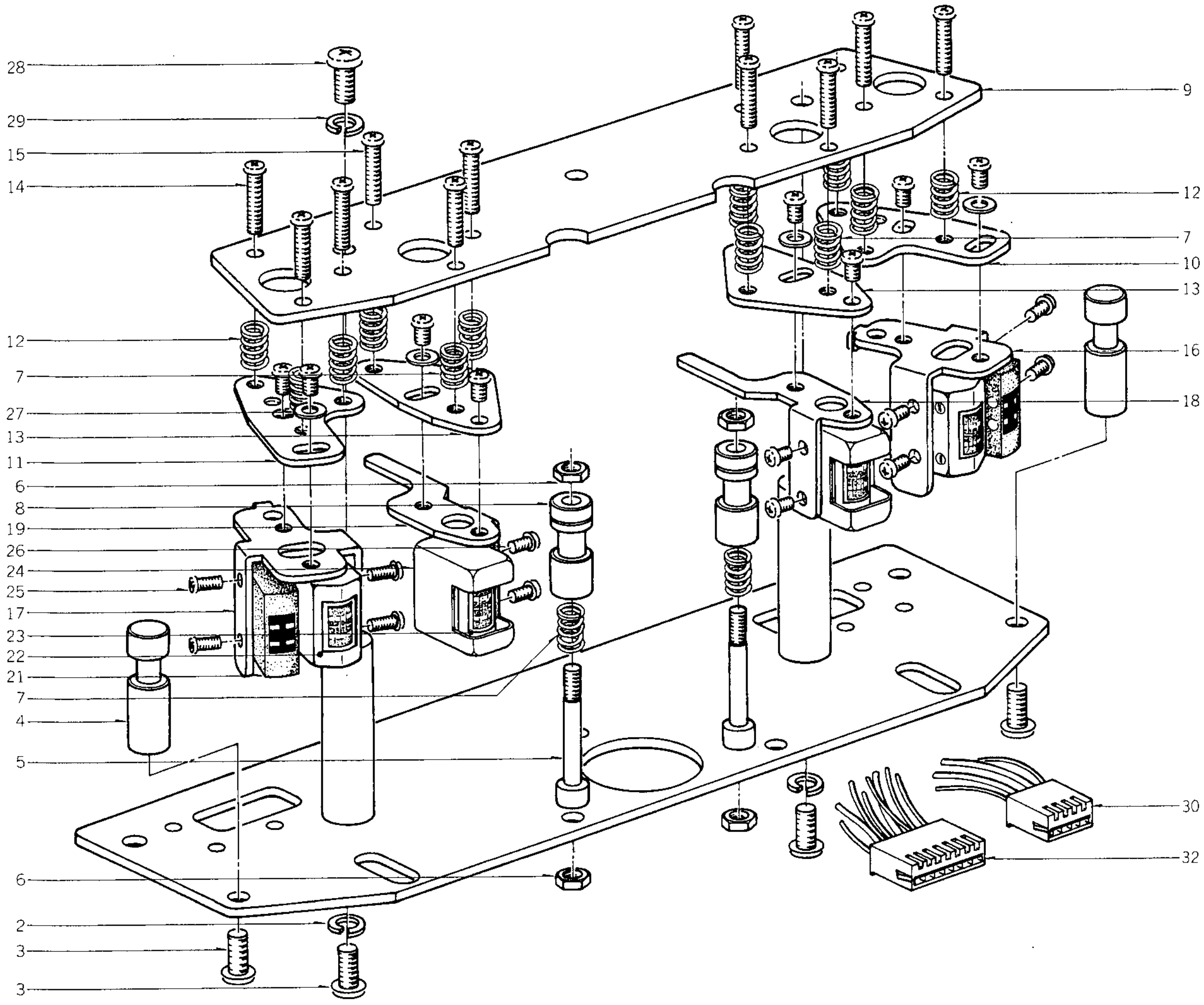
1. RECOMMENDED SPARE PARTS LIST

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

Parts No.	Description	Note
BA308262	Sys. Con P.C Board Comp. GX-635D (U/T) (JPN)	
BA308263	Sys. Con P.C Board Comp. GX-635D (CSA) (AAL)	
BA308264	Sys. Con P.C Board Comp. GX-635D (CEE) (UK)	
BA308275	Pre Amp P.C Board Comp. GX-635D (U/T) (JPN, CSA, AAL)	
BA308296	Pre Amp P.C Board Comp. GX-635D (CEE) (UK)	
BH308277	Head Block Comp. GX-635D	
BM308310	Motor Block Comp. (SCM-200) GX-635D	
BM587518	Motor Block Comp. 24XO-TD TE	
BR587553	Reel Table Block Comp. TE (Take-up)	
BT308918	⚠ Power Trans. THT-1	U/T
BT308919	⚠ Power Trans. THT-2	JPN
BT308921	⚠ Power Trans. THT-4	CSA, AAL
BT308920	⚠ Power Trans. THT-3	CEE, UK
BZ308227	Roller (L) Block Comp. GX-635D	
BZ308228	Roller (R) Block Comp. GX-635D	
ED698826	LED SR-105D	
ED283138	LED GL-3PG1	
ED303005	LED GL-3PY1	
ED308945	Silicon Diode SVB10-100	
ED313623	Zener Diode HZ22-3	
ED309069	Zener Diode HZ6B-2	
ED308951	Zener Diode WZ-120	
ED308941	Silicon Diode SVB10-200	
ED308952	Germanium Diode (Stop. Type) 1K34A-LR	
ED308953	Germanium Diode (Home. Type) 1K34A-LH	
ED306109	Silicon Diode W03B	
ED224550	Silicon Diode 10D4	
EI308936	IC M54410P	IC1
EI430661	IC M53200P	IC2, 3
EI633960	IC M53202P	IC4
EI573840	IC M53204P	IC5
EI306141	IC LA4170	IC1
EM309051	VU Meter VU-50-003	U/T, CSA, AAL, CEE, UK
EM309050	VU Meter VU-50-005	JPN
EP309056	Plunger TDS-07A	
EP310448	Plunger 1664TLT	
EP310447	Plunger 1240TLT	
EP309061	Relay FRL-264	
EP308949	Relay BR211	
EP308973	Relay LAB2NS	

Parts No.	Description	Note
ES313792	⚠ Slide SW. TSS012183	CEE, UK
ES308914	Push SW. SUF12	
ES308913	Rotary SW. SRU1023S	
ES308925	Push SW. SUF12	
ES313622	⚠ Push SW. JP-27 (w/o lavel)	U/T, JPN
ES309059	⚠ Push SW. JP-27	CSA, AAL
ES309058	⚠ Push SW. JP-24	CEE, UK
ES309094	Slide SW. SL13-6-6-2-2-B	
ES301435	Slide SW. CL-210E	
ES308984	Push SW. SUF44	
ES308983	Push SW. J-K2023	
ES301436	Slide SW. CL-206E	
ES301715	Slide SW. SSB02214	
ES306292	Leaf SW. BSW-86	
ET312497	Transistor 2SC1061 (B) (C) YC-408	
ET307349	Transistor 2SD794 (P) (Q)	
ET308947	Transistor 2SC2336B (Q) (R)	
ET308937	Transistor 2SC2130 (G) (H)	
ET522268	Transistor 2SA7339 (Q)	
ET399846	Transistor 2SC945L (Q)	
ET352146	Transistor 2SC458LG (D)	
ET308978	FET 2SK68 (M)	
ET311336	Transistor 2SC2130 (H)	
EV308917	Vol. VM10E 1 kB	
EV302718	Semi-fixed/Vol. V18K3-6 (4US) 50 kB	
EV309071	Semi-fixed/Vol. V18K3-6 (4US) 20 kB	
EV305637	Semi-fixed/Vol. D8 Axial Type 10 kB	
EV305636	Semi-fixed/Vol. D8 Axial Type 50 kB	
EV306989	Semi-fixed/Vol. D8 Axial Type 1 kB	
EV301437	Single Axial 2 Throw Vol. GM70R-715 10 kB×2	
EV308966	Semi-fixed/Vol. D8 Axial Type 30 kB	
EV308995	Double Axial 2 Throw Vol. DM20R 50 kA×2	
HE308149	ERASE HEAD E4-241	
HP308146	PB HEAD P4-241	
HR308148	REC HEAD R4-241	
MB308701	Counter Belt	
MP424023	Pinch Roller KD D=37	

2. ILLUSTRATION OF HEAD BLOCK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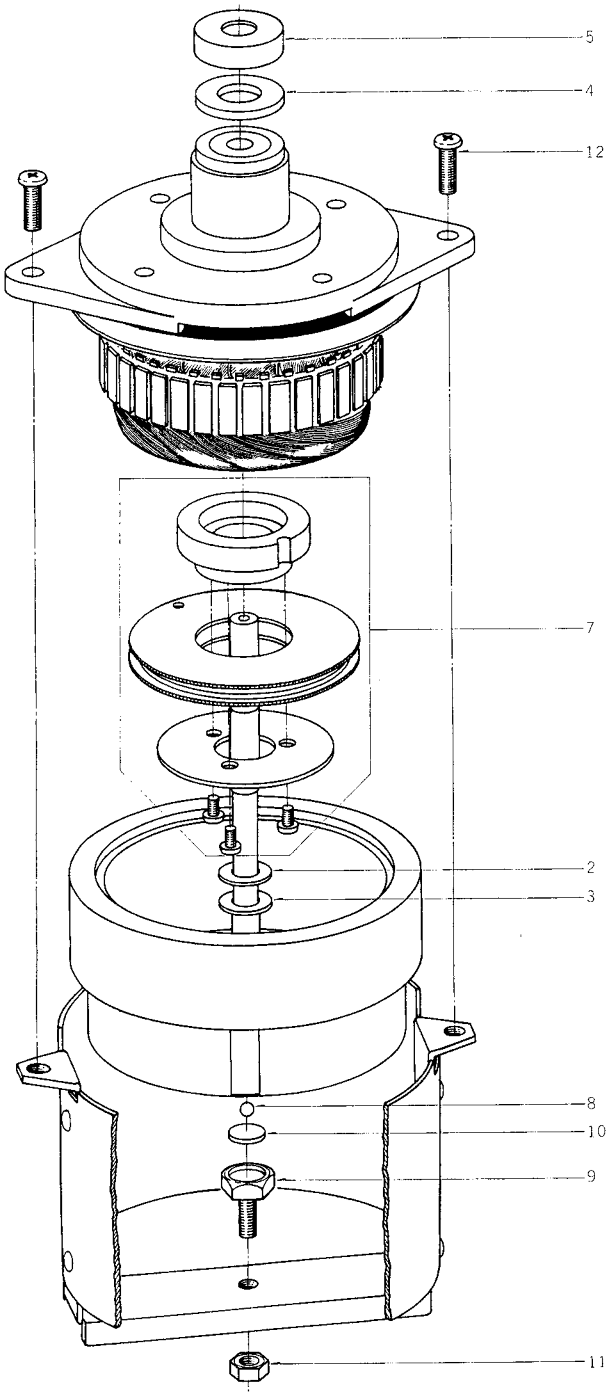
2) HEAD BLOCK

Ref. No.	Parts No.	Description	Schematic No.
2-1x	BH308277	Head Block Comp. GX-635D	
2-2	ZW273914	Spring Washer, M4	
2-3	ZS413201	Screw, pan head 4x8	
2-4	HZ528581	Tape Guide (A)	ND-0006
2-5	MH578957	Tape Guide Prop	TD-0003
2-6	ZW265522	M3 Nut, #2	
2-7	ZG466312	Angle Adjust Spring (E)	BS-0018
2-8	HZ301777	Tape Guide (C)	NE-0212
2-9	HB308681	Head Sub Chassis	TH-0002
2-10	HB309407	ER Head Base (A)	TH-0007
2-11	HB309408	ER Head Base (B)	TH-0007
2-12	ZG303300	Angle Adjust Spring (B)	RD-55
2-13	HB308685	PB Head Base	TH-0005
2-14	ZS608501	Screw, pan head 3x12	
2-15	ZS417407	Screw, pan head 3x10	
2-16	HA309409	ER Head Angle (A)	TH-0008
2-17	HA309410	ER Head Angle (B)	TH-0008
2-18	HA308686	PB Head Angle (A)	TH-0006
2-19	HA308687	PB Head Angle (B)	TH-0006
2-20x	HZ309411	P.C Board Terminal Plate	TH-0009
2-21	HE308149	ERASE HEAD E4-241	
2-22	HR308148	REC HEAD R4-241	
2-23	HP308146	PB HEAD P4-241	
2-24	HZ301366	Head Shield	NE-0211
2-25	ZS460440	Screw, pan head 2x4	
2-26	ZS608095	Screw, pan head 2x5	
2-27	ZW309055	Washer D3x6x0.5t (Black)	
2-28	ZS201778	Screw, pan head 4x8	
2-29	ZW668621	M4 Spring Washer (Black)	
2-30	EJ310390	4P Micro Connector W-H8004-020	26-6-306
2-31x	EJ310391	4P Micro Connector W-H8004-021	26-6-307
2-32	EJ310392	7P Micro Connector W-H8004-016	26-6-308
2-33x	EJ310446	7P Micro Connector W-H8004-017	26-6-309

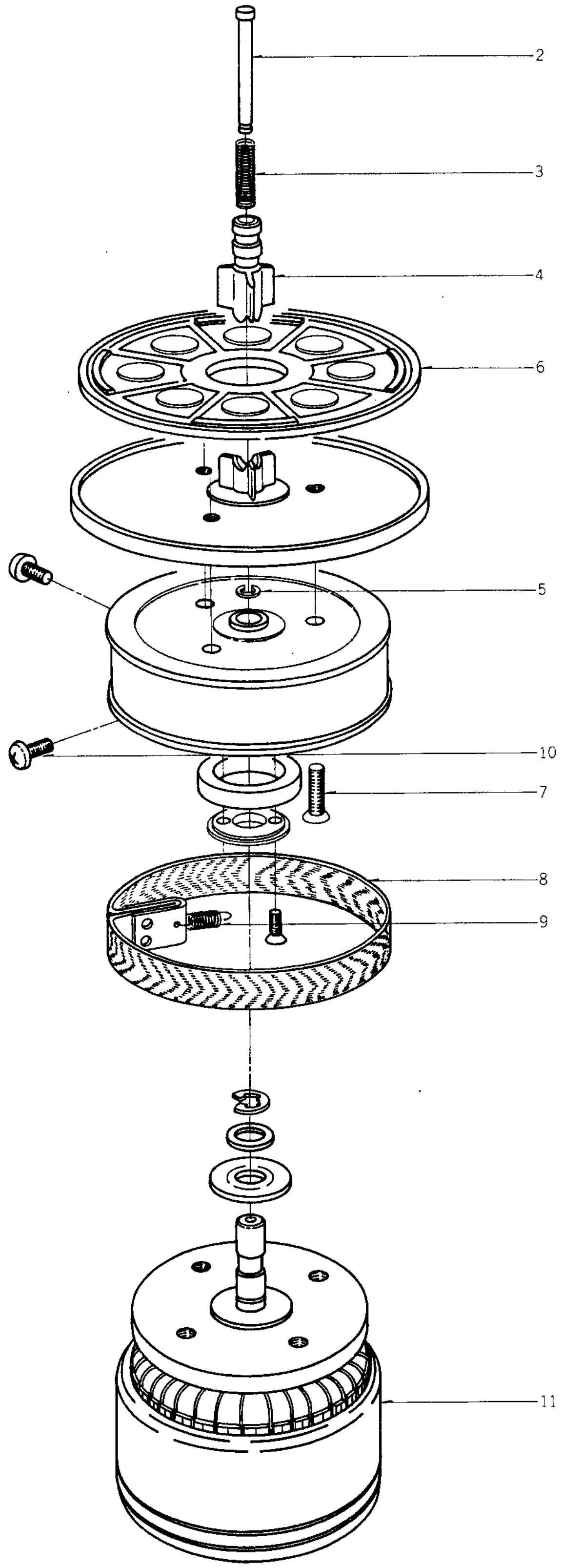
3. ILLUSTRATION OF MOTOR (SCM-200) BLOCK



3) MOTOR (SCM-200) BLOCK

Ref. No.	Parts No.	Description	Schematic No.
3-1x	BM308310	Motor Block Comp. (SCM-200) GX-635D	
3-2	ZW597543	Thrust Washer	KJ-7009
3-3	ZW605698	Thrust Washer (B)	KJ-7009
3-4	ZW597622	Felt Washer	KJ-7022
3-5	SK597633	Cap	KJ-7023
3-6x	ZS608308	Screw, pan head 3x18, w/washer	
3-7	BZ308315	Detection Gear Assy GX-635D	
3-8	MV368886	Steel Ball D3	
3-9	MZ585900	Shaft Support	LS-1203
3-10	MZ597690	Ball Holder	KJ-7029
3-11	ZW413278	Nut M5, #1	
3-12	ZS413201	Screw, pan head 4x8	

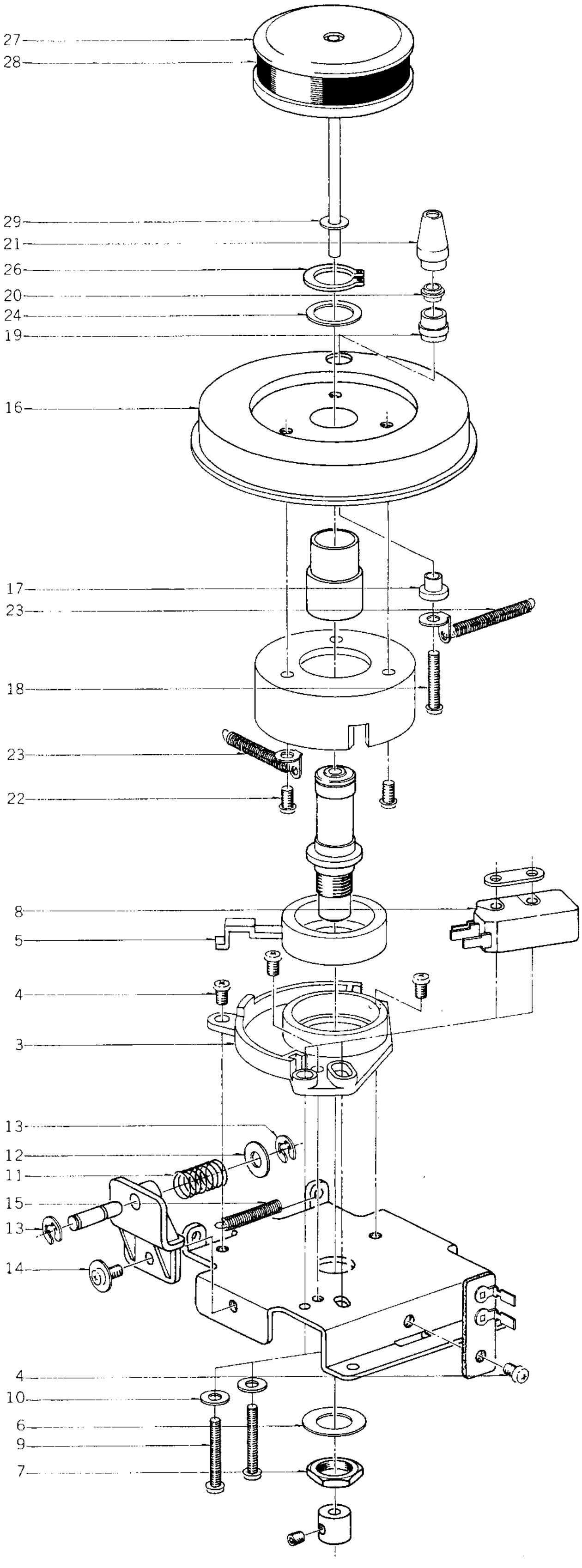
4. ILLUSTRATION OF REEL TABLE BLOCK



4) REEL TABLE BLOCK

Ref. No.	Parts No.	Description	Schematic No.
4-1x	BR587553	Reel Table Block Comp. TE (Take-up)	
4-2	MS342000	Reel Shaft	3R-108
4-3	ZG540617	Clamper Spring	TW-2096
4-4	MT534677	Reel Clamper	TW-2032
4-5	ZW270088	'E' Ring 1.9M	6-1-9
4-6	MT534688	Reel Table Rubber	TW-2033
4-7	ZS419670	Screw, pan head 3x12	
4-8	MT436860	Brake Cloth Comp. MR	MR-269
4-9	ZG317496	Felt Tension Spring	MR-260
4-10	ZS424056	Screw, pan head 4x10	
	MOTOR BLOCK		
4-11	BM587518	Motor Block Comp. 24XO-TD TE	

5. ILLUSTRATION OF ROLLER BLOCK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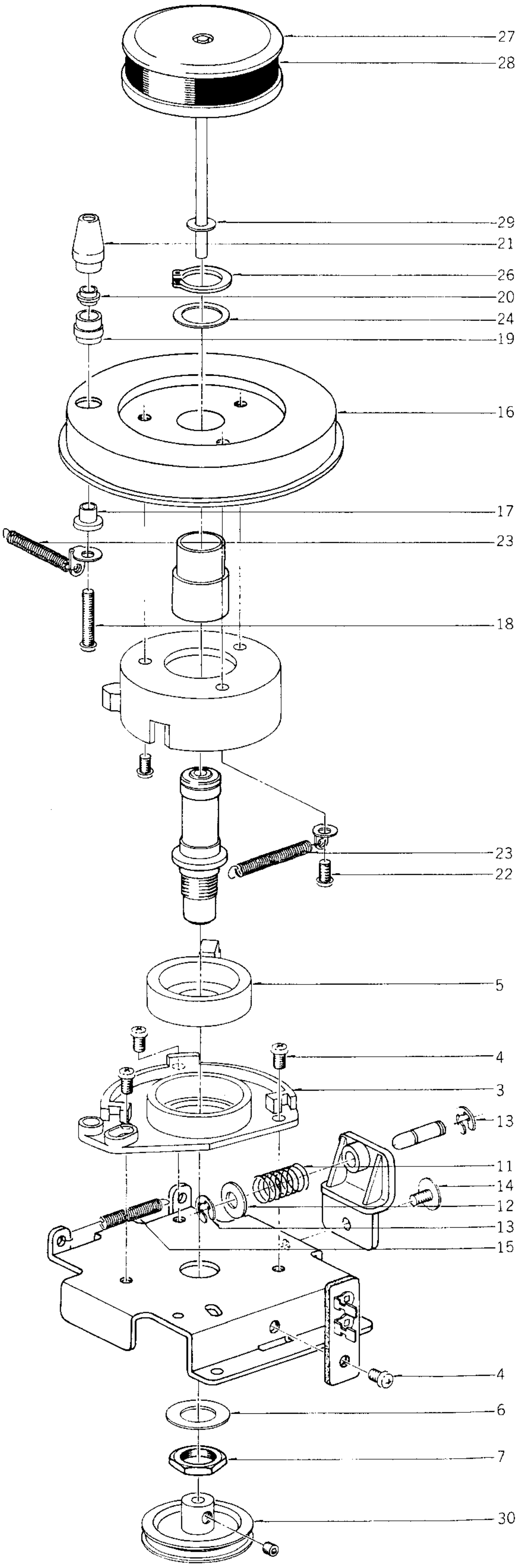
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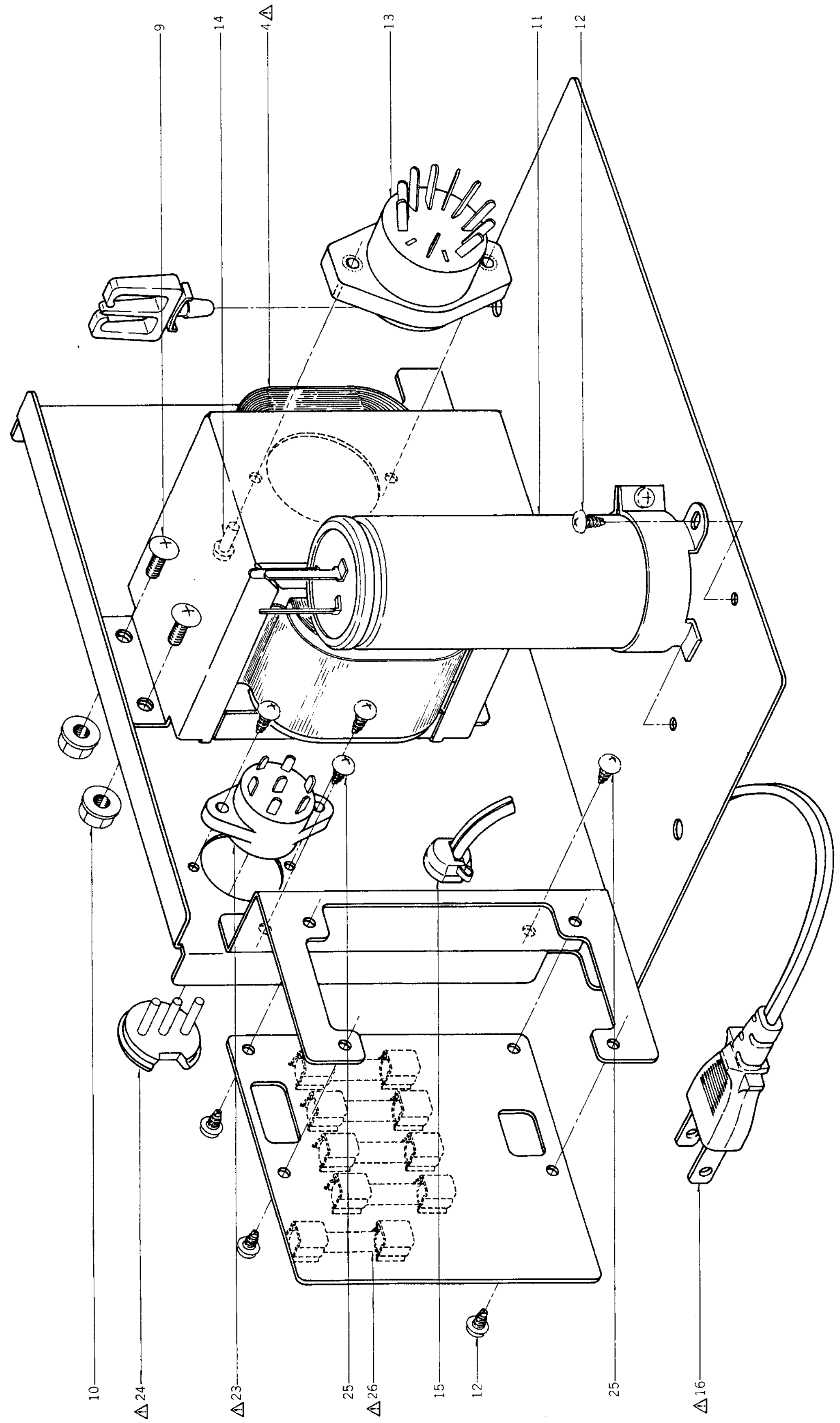
5) ROLLER BLOCK

Ref. No.	Parts No.	Description	Schematic No.
5-1x	BZ308227	Roller (L) Block Comp. GX-635D	
5-2x	BZ308228	Roller (R) Block Comp. GX-635D	
5-3	SZ308717	Arm Damper Base	TH-2013
5-4	ZS417216	Screw, pan head 3x4	
5-5	SZ308718	Arm Damper	TH-2014
5-6	EW308922	Washer D9.2x15x0.5t (ALP)	
5-7	ZW302896	Nut D9x11x2t (P=0.75)	
5-8	ES308929	Micro SW. VV-S	25-1-55
5-9	ZS308931	Screw, 2.6x18 (Pan)	
5-10	ZW550697	Washer (SPC) D2.9x7.4x0.5t	
5-11	ZG308722	Lock Spring	TH-2018
5-12	ZW308930	Washer D4.2x9x0.25t (PBP)	
5-13	ZW270101	'E' Ring 3M	6-1-9
5-14	ZS608321	Screw, pan head 3x6, W=8	
5-15	ZG567685	Azimuth Spring (1)	CP-0040
5-16	MI308707	Tension Wheel	TH-2004
5-17	EZ308712	Insu. Bush	TH-2008
5-18	ZS422965	Screw, pan head 3x15	
5-19	HZ308710	Tape Guide (B)	TH-2007
5-20	MZ535072	Insulator Bush (A)	TW-2075
5-21	HZ308709	Tape Guide (A)	TH-2006
5-22	ZS479474	Screw, pan head 2.6x5	
5-23	ZG312399	Spring T1-3.2/0.2-31.5	
5-24	ZW308927	Washer D10.2x14x0.5t (Nylon)	
5-25x	ZW313822	Washer D10.2x14x0.13t (Polyslider)	
5-26	ZW307294	'C' Ring STW-10-C-3	6-1-3
5-27	MR308713	Counter Roller	TH-2009
5-28	MB308714	Roller Belt	TH-2010
5-29	ZW308928	Washer D2.4x7x0.2t (Teflon)	
5-30	MR308715	Roller Pulley (only R)	TH-2011

6. ILLUSTRATION OF POWER SUPPLY BLOCK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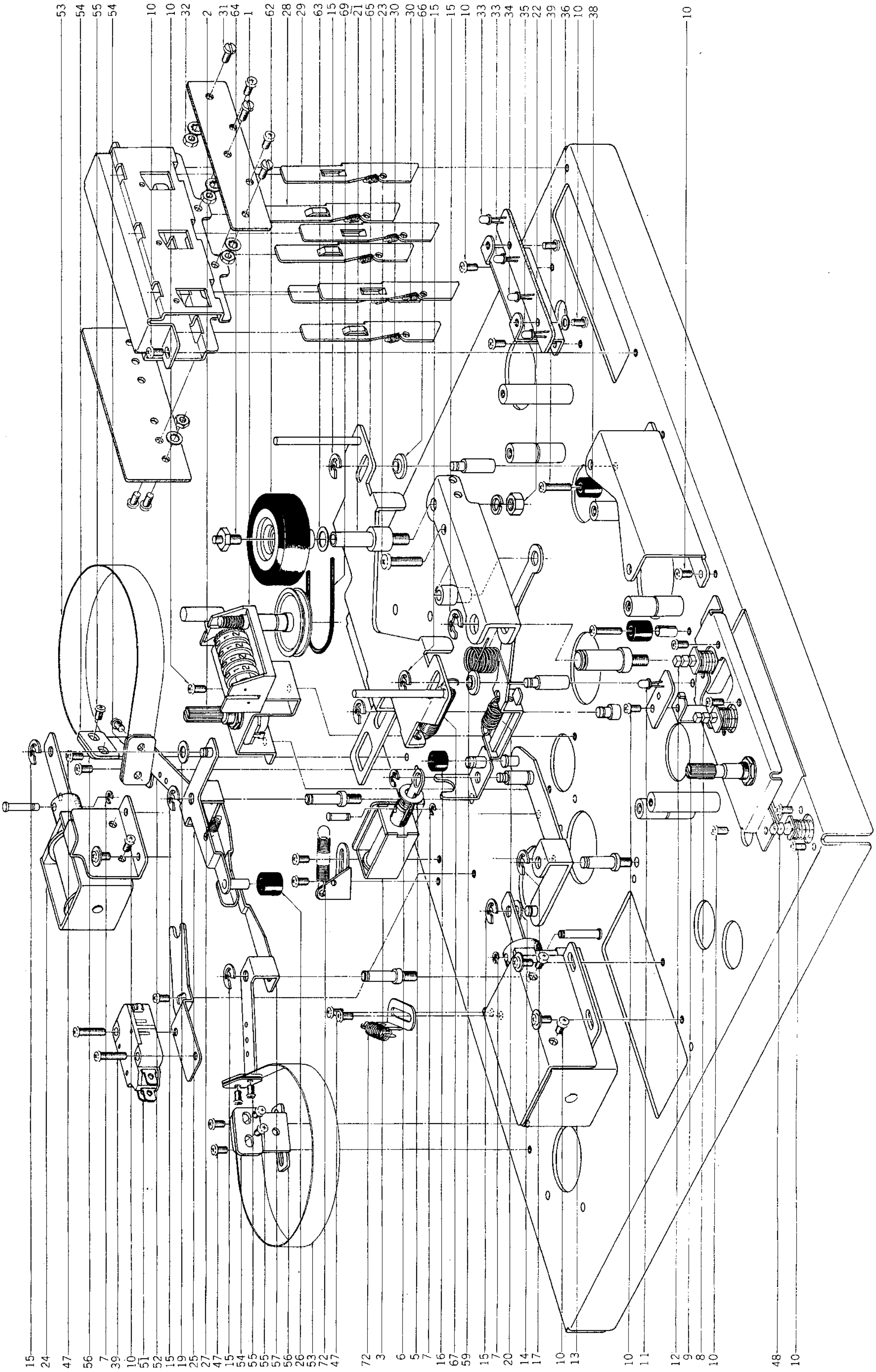
6) POWER SUPPLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.
	FUSE P.C BOARD BLOCK		
6-1x	EC551160	⚠ Ceramic/C. DB821 NA 0.01μF (Z) 1.4 kWV (U/T, JPN)	24-5-55
6-2x	EC294118	⚠ Ceramic/C. DPN6600 YM 0.01μF (P) 125WV (CSA, AAL)	24-5-70
6-3x	EC301320	⚠ MP/C. 4700PF (M) 250WV (CEE, UK)	24-9-122
	POWER SUPPLY P.C BOARD		
6-4	BT308918	⚠ Power Trans. THT-1 (U/T)	38-4-667
6-5x	BT308919	⚠ Power Trans. THT-2 (JPN)	38-4-668
6-6x	BT308921	⚠ Power Trans. THT-4 (CSA, AAL)	38-4-670
6-7x	BT308920	⚠ Power Trans. THT-3 (CEE, UK)	38-4-669
6-8x	ZW308916	Washer D4.5x10x1t	
6-9	ZS435273	Screw, binding head 4x10	
6-10	ZW413267	Flange Nut M4	
6-11	EC249592	MP/C. 4+4μF 250WV	24-9-116
6-12	ZS325495	Tapping Screw #2, 3x6 (BR)	
6-13	EJ307274	9P Remo. Con Socket	31-1-223
6-14	ZS421740	Screw, pan head 3x8 (Black)	
6-15	EZ631945	Strain Relief SR-4N-4 (U/T, JPN, CSA, AAL)	2-7-49
6-16	EW306428	⚠ AC Cord (U/T)	26-3-64
6-17x	EW306427	⚠ AC Cord (JPN)	26-3-63
6-18x	EW305691	⚠ AC Cord CUL (CSA, AAL)	26-3-65
6-19x	EJ301513	⚠ 2P Inlet (CEE, UK)	31-1-200
6-20x	ES313792	⚠ Slide SW. TSS012183 (CEE, UK)	25-3-148
6-21x	ZS447761	Tapping Screw #2, 3x6(BR) (Black) (CEE, UK)	
6-22x	ZS422076	Screw, pan head 3x5 (CEE, UK)	
6-23	EJ262732	⚠ Socket (Volt. Selector) (U/T)	31-1-190
6-24	EJ249467	⚠ Voltage Selector (U/T)	42-1-109
6-25	ZS463353	Tapping Screw #2, 3x8(BR) (Black) (U/T)	
6-26	EF563681	⚠ Fuse 1A 250V (U/T)	39-1-50
6-27x	EF563703	⚠ Fuse 2A 250V (U/T, JPN)	39-1-50
6-28x	EF616555	⚠ Fuse 1.6A 250V (U/T, JPN)	39-1-50
6-29x	EF575932	⚠ Fuse 0.8A 250V (U/T, JPN)	39-1-50
6-30x	EF659698	⚠ Fuse SS-2 2A 250V (CSA, AAL)	39-1-56
6-31x	EF308923	⚠ Fuse SS-2 1.6A (CSA, AAL)	39-1-56
6-32x	EF683313	⚠ Fuse SS-2 0.8A 250V (CSA, AAL)	39-1-56
6-33x	EF593706	⚠ Fuse (SEMKO T Type) 500mAT (CEE, UK)	39-1-53
6-34x	EF623103	⚠ Fuse (SEMKO T Type) 1AT (CEE, UK)	39-1-53

7. ILLUSTRATION OF MECHA ASSEMBLY BLOCK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7) MECHA ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.
	COUNTER BLOCK		
7-1	MC308242	Counter Part MP499-07	9-1-67
7-2	EV308917	Vol. VM10E 1 kB	36-6-34
	PAUSE PLUNGER BLOCK		
7-3	EP309056	Plunger TDS-07A	44-1-105
7-4x	ZS592378	Screw, pan head 2.6x3	
7-5	ZW313593	Washer (PBP) D5.1x10.3x0.5t	
7-6	ZG308734	Joint Spring	TH-2031
7-7	ZW270088	'E' Ring 1.9M	6-1-9
	SW. BLOCK		
7-8	ES308914	Push SW. SUF12	25-5-301
7-9	ES308913	Rotary SW. SRU1023S	25-6-161
7-10	ZS422076	Screw, pan head 3x5	
7-11	ED698826	LED SR-105D	45-15-16
7-12	ES308925	Push SW. SUF12	25-5-304
	PR PLUNGER BLOCK		
7-13	EP310448	Plunger 1664TLT	44-1-106
7-14	ZW678723	Washer D6.2x13x0.2t (Teflon)	
7-15	ZW290283	'U' Ring, 2.85M	6-1-1
7-16	MB428343	Stopper Rubber, KD	KD-1088
7-17	ZW270123	'E' Ring, 4M	6-1-9
7-18x	ZW260076	Washer (Nylon) D6.1x10x0.5t	
7-19	ZW420682	Washer (Nylon) D4.2x9x0.5t	
7-20	ZG308728	P Spring	TH-2025
7-21	MS527591	Pinch Roller Shaft	ND-1030
7-22	ZW413278	Nut M5, #1	
7-23	ZS444262	Screw, binding head 4x18	
	BRAKE PLUNGER BLOCK		
7-24	EP310447	Plunger 1240TLT	44-1-107
7-25	ML308905	Brake Lever Part GX-635D	TH-2027
7-26	MZ397181	Lever Cushion	KD-1069
7-27	ZG580522	Clutch Lever Spring	TD-2045
	OPERATION BLOCK		
7-28	ML308737	Operation Plate (A)	TH-2034
7-29	ML308677	Operation Plate (B)	TH-2034
7-30	ZG576314	FF Idler Spring	PW-2030
	OPERATION P.C BOARD (A) BLOCK		
7-31	ZS302720	Screw, flat head 3x6 (Black)	
7-32	ZW273756	Nut M3, #1	
	LED P.C BOARD BLOCK		
7-33	ED283138	LED GL-3PG1	45-15-15
7-34	ED303005	LED GL-3PY1	45-15-18
7-35	ED698826	LED SR-105D	45-15-16
7-36	ZW309054	Washer D3x6x0.2t (Nylon)	
	MECHA ASSEMBLY BLOCK		
7-37x	ZS413201	Screw, pan head 4x8	
7-38	MB606712	Stopper Rubber KJ	KJ-2060
7-39	ZS419670	Screw, pan head 3x12	
7-40x	ZW273914	Spring Washer, M4	
7-41x	ZW413188	Nut M4, #1	
7-42x	ZW274026	Spring Washer, M5	
7-43x	ZW413278	Nut M5, #1	
7-44x	ZS325495	Tapping Screw #2, 3x6 (BR)	
7-45x	SA312529	Rubber Foot (A-2) Part	LE-6739
7-46x	ZS417150	Screw, pan head 4x6	
7-47	ZS323728	Screw, binding head 3x5	
7-48	ES313622	⚠ Push SW. JP-27 (w/o label) (U/T, JPN)	25-5-318
7-49x	ES309059	⚠ Push SW. JP-27 (CSA, AAL)	25-5-285
7-50x	ES309058	⚠ Push SW. JP-24 (CEE, UK)	25-5-286
7-51	ES573478	Micro SW. K-3	25-1-31
7-52	ML582041	Brake Lever (A)	TD-1019
7-53	MT314987	Brake Band	MR-213
7-54	MZ314998	Brake Retaining Plate	MR-212
7-55	ZS417216	Screw, pan head 3x4	
7-56	ML582074	Brake Band Support	TD-1023
7-57	ML533643	Brake Lever (B)	TW-1030
7-58x	ZS608321	Screw, pan head 3x6, W=8	
7-59	ZG301340	Pinch Roller Spring	NE-2237
7-60x	ZW270156	'E' Ring 6M	6-1-9
7-61x	ZW270101	'E' Ring 3M	6-1-9
7-62	MP424023	Pinch Roller KD D=37	KD-1084
7-63	ZW376391	Washer (Polyslider) D6.1x10x0.13t	
7-64	ZS527681	Pinch Roller Set Screw	ND-6019
7-65	ML308904	Shifter Slide Part	TH-1012
7-66	ZW580173	Guide Washer	TD-1055
7-67	ZG313099	Coil Spring T1-8.0/0.5-31.5	
7-68x	ZS309096	Screw, 3x6 (Pan) w/Plug	
7-69	MB308701	Counter Belt	TH-1014
7-70x	ZW330412	Adjust. Washer (U) D4x13x0.13t	
7-71x	ZW330423	Adjust. Washer (U) D4x13x0.25t	
7-72	ZG672478	Brake Spring	TE-1017

8. P.C BOARDS

(1) SYS. CON P.C BOARD (TH-1015) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
(1)-1	BA308262	Sys. Con P.C Board Comp. GX-635D (U/T) (JPN)	
(1)-2	BA308263	Sys. Con P.C Board Comp. GX-635D (CSA) (AAL)	
(1)-3	BA308264	Sys. Con P.C Board Comp. GX-635D (CEE) (UK)	
(1)-IC1	EI308936	IC M54410P	45-8-304
(1)-IC2,3	EI430661	IC M53200P	45-8-38
(1)-IC4	EI633960	IC M53202P	45-8-140
(1)-IC5	EI573840	IC M53204P	45-8-106
(1)-TR1	ET312497	Transistor 2SC1061(B)(C) YC-408	45-1-96
(1)-TR2	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR3	ET307349	Transistor 2SD794(P)(Q)	45-1-334
(1)-TR4to8	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR9,10	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(1)-TR11	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR12	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(1)-TR13	ET308947	Transistor 2SC2336B(Q)(R)	45-1-333
(1)-TR14,15	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR16to19	ET308937	Transistor 2SC2130(G)(H)	45-1-317
(1)-TR20	ET522268	Transistor 2SA733(Q)	45-1-124
(1)-TR21	ET399846	Transistor 2SC945L(Q)	45-1-85
(1)-TR22	ET308937	Transistor 2SC2130(G)(H)	45-1-317
(1)-TR23	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR24,25	ET308937	Transistor 2SC2130(G)(H)	45-1-317
(1)-TR26to32	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-D1	ED308945	Silicon Diode SVB10-100	45-2-82
(1)-D2	ED313623	Zener Diode HZ22-3	45-6-80
(1)-D3	ED308945	Silicon Diode SVB10-100	45-2-82
(1)-D4	ED309069	Zener Diode HZ6B-2	45-6-80
(1)-D5	ED308951	Zener Diode WZ-120	45-6-67
(1)-D6	ED510772	Zener Diode WZ-120	45-6-67
(1)-D7,8	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D9	ED308941	Silicon Diode SVB10-200	45-2-82
(1)-D10,11	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(1)-D12,13	ED308953	Germanium Diode (Home. Type) 1K34A-LH	45-3-46
(1)-D14	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(1)-D15	ED624903	Silicon Diode 1S2473	45-3-28
(1)-D16	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D17	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(1)-D18	ED624903	Silicon Diode 1S2473	45-3-28
(1)-D19to22	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D24	ED624903	Silicon Diode 1S2473	45-3-28
(1)-D26	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D27	ED624903	Silicon Diode 1S2473	45-3-28
(1)-D28	ED308953	Germanium Diode (Home. Type) 1K34A-LH	45-3-46
(1)-D29to32	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D33,34	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(1)-D35	ED624903	Silicon Diode 1S2473	45-3-28
(1)-D36to38	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(1)-D39,40	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D41,42	ED308953	Germanium Diode (Home. Type) 1K34A-LH	45-3-46
(1)-D43	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D44	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(1)-D45	ED308953	Germanium Diode (Home. Type) 1K34A-LH	45-3-46
(1)-D46	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(1)-D47,48	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D49	ED306109	Silicon Diode W03B	45-2-78
(1)-D50	ED308941	Silicon Diode SVB10-200	45-2-82
(1)-D51,52	ED224550	Silicon Diode 10D4	45-2-16
(1)-D53	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D54	ED224550	Silicon Diode 10D4	45-2-16
(1)-D55	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D56	ED224550	Silicon Diode 10D4	45-2-16
(1)-D57	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-RL1to4	EP309061	Relay FRL-264	47-1-37
(1)-RL5	EP308949	Relay BR211	47-2-31
(1)-RL6	EP280743	Relay BR111CD024D	47-1-31
(1)-SW1	ES309094	Slide SW. SL13-6-6-2-2-B	25-3-159
(1)-VR1	EV302718	Semi-fixed/Vol. V18K3-6 (4US) 50 kB	36-9-26
(1)-VR2	EV309071	Semi-fixed/Vol. V18K3-6 (4US) 20 kB	36-9-26
(1)-CR1to14	ER300820	Spark Quencher CRU-112 0.1μ+120 ohms 125WV (U/T, JPN, CSA, AAL)	41-1-63
(1)-R110	ER309092	Metal Oxide Film/R. 2W 820 ohms(K)	35-15-8
(1)-R111	ER308956	Cement/R. (Home. Type) 20W 220 ohms(K)	35-16-81
(1)-R112	ER308955	Cement/R. (Home. Type) 20W 36 ohms(K)	35-16-81
(1)-C1	EC295997	Elect./C. (Vert. Type) 2200μF 35WV	24-12-9
(1)-C4	EC450270	Elect./C. (Vert. Type) 1000μF 25WV	24-12-9
(1)-C5	EC459145	Elect./C. (Vert. Type) 2200μF 16WV	24-12-9
(1)-C7	EC220410	Elect./C. (Vert. Type) 1000μF 10WV	24-12-9
(1)-C19	EC310370	Metalized Film/C. (Vert. Type) 1.5μF(K) 180WV	24-16-12
(1)-C20	EC310368	Metalized Film/C. (Vert. Type) 3.5μF(K) 180WV	24-16-13
(1)-C35to37	EC304708	Tantalum/C. (D Type) 47μF(M) 6.3WV	24-15-12
(1)-C39,40	EC304186	NP/C. (Vert. Type) 10μF(M) 16WV	24-17-26
(1)-C44,45	EC308940	NP/C. (Home. Type) 0.47μF(M) 50WV	24-17-31
(1)-C46,47	EC308950	Tantalum/C. 10μF(M) 6.3WV	24-15-12
(1)-C48	EC308943	Elect./C. 470μF 160WV	24-12-32
(1)-C49	EC313577	Elect./C. (Vert. Type) 100μF 100WV	24-12-46
(1)-C52	EC310366	Metalized Film/C. (Vert. Type) 0.47μF(M) 150WV	24-16-11
(1)-C53	EC310374	Tantalum/C. (D Type) 100μF(M) 3.15WV	24-15-12
(1)-C101to128	EC310372	Metalized Film/C. (Vert. Type) 0.1μF(M) 200WV (CEE, UK)	24-16-14
(1)-4	ZS421806	Screw, pan head 3x8	
(1)-5	ZW273756	Nut M3, #1	

(2) PRE AMP P.C BOARD (TH-5001A) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
(2)-1	BA308275	Pre Amp P.C Board Comp. GX-635D (U/T) (JPN, CSA, AAL)	
(2)-2	BA308296	Pre Amp P.C Board Comp. GX-635D (CEE) (UK)	
(2)-IC1	EI306141	IC LA4170	45-8-305
(2)-TR1to3	ET352146	Transistor 2SC458LG(D)	45-1-29
(2)-TR4	ET308975	Transistor 2SC458(D)	45-1-26
(2)-TR5,6	ET638504	Transistor 2SC945L(P)	45-1-85
(2)-TR7to9	ET352146	Transistor 2SC458LG(D)	45-1-29
(2)-TR10	ET638504	Transistor 2SC945L(P)	45-1-85
(2)-TR11	ET308978	FET 2SK68(M)	45-12-14
(2)-TR12	ET311336	Transistor 2SC2130(H)	45-1-317
(2)-TR13to15	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(2)-TR16	ET208012	Transistor 2SD571(K)	45-1-218
(2)-TR17to23	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(2)-D1,2	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(2)-D3	ED560913	Silicon Diode 1S2473 VE	45-3-23
(2)-D4	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(2)-D5to8	ED560913	Silicon Diode 1S2473 VE	45-3-23
(2)-L1	EO301448	Inductor 45H-044 1MH	23-1-277
(2)-L2	EO301467	Ferri Inductor RX-9P 3.3MH(J)	23-1-275
(2)-L3	EO308982	Inductor 22MH	23-1-300
(2)-L4	EO308974	OSC Coil 49H-364	23-4-50
(2)-L5,6	EO313608	Ferri Inductor FL9H 270μH(J)	23-1-314
(2)-J1	EJ305629	Headphone Jack JL3A	31-2-90
(2)-J2	EJ305739	Mic Jack JU2	31-2-89
(2)-J3	EJ308986	4P PIN Jack (U/T, JPN, CSA, AAL)	31-5-145
(2)-J3	EJ306985	4P PIN Jack (CEE, UK)	31-5-142
(2)-SW1	ES301435	Slide SW. CL-210E	25-3-136
(2)-SW2	ES308984	Push SW. SUF44	25-5-302
(2)-SW3	ES308983	Push SW. J-K2023	25-5-305
(2)-SW4	ES301436	Slide SW. CL-206E	25-3-135
(2)-SW5	ES301715	Slide SW. SSB02214	25-3-127
(2)-SW6	ES306292	Leaf SW. BSW-86	25-10-31
(2)-VR1,2	EV305637	Semi-fixed/Vol. D8 Axial Type 10 kB	36-10-273
(2)-VR3,4	EV305636	Semi-fixed/Vol. D8 Axial Type 50 kB	36-10-273
(2)-VR5	EV306989	Semi-fixed/Vol. D8 Axial Type 1 kB	36-10-273
(2)-VR6	EV301437	Single Axial 2 Throw Vol. GM70R-715 10 kB×2	36-22-28
(2)-VR7	EV308966	Semi-fixed/Vol. D8 Axial Type 30 kB	36-10-273
(2)-P1,2	EJ249333	Micro Connector 4P Plug W-P0504	42-1-104
(2)-P3,4	EJ249366	Micro Connector 7P Plug W-P0507	42-1-104
(2)-RL1	EP308973	Relay LAB2NS	47-2-30
(2)-R82	ER306299	Metal Oxide Film/R. (Homing Type) 2W 390 ohms(J)	35-11-22
(2)-TC1,2	EC558202	Trimmer/C. TM-80A 80PF	24-2-26
(2)-C1	EC313868	Elect./C. (LL, Homing) 10μF(M) 16WV	24-20-19
(2)-C3	EC305677	Styrol/C. 200PF(K) 50WV	24-11-14
(2)-C15	EC313624	Elect./C. (LL, Homing) 22μF(M) 25WV	24-20-19
(2)-C20	EC306420	Styrol/C. (Homing Type) 750PF(J) 50WV	24-11-14
(2)-C22	EC313868	Elect/C. (LL, Homing) 10μF(M) 16WV	24-20-19
(2)-C25	EC308990	Styrol/C. (Homing Type) 470PF(K) 50WV	24-11-14
(2)-C29	EC305677	Styrol/C. (Homing Type) 200PF(K) 50WV (R)	24-11-14
(2)-C29	EC516701	Styrol/C. (Vert. Type) 200PF(K) 50WV (L)	24-11-3
(2)-C30	EC306987	Styrol/C. (Homing Type) 470PF(J) 50WV (R)	24-11-14
(2)-C30	EC405898	Styrol/C. (Vert. Type) 470PF(J) 50WV (L)	24-11-3
(2)-C32	EC305677	Styrol/C. (Homing Type) 200PF(K) 50WV	24-11-14
(2)-C36	EC306438	Styrol/C. (Homing Type) 100PF(J) 50WV	24-11-14
(2)-C48	EC313265	Styrol/C. (Vert. Type) 150PF(J) 500WV	24-11-3

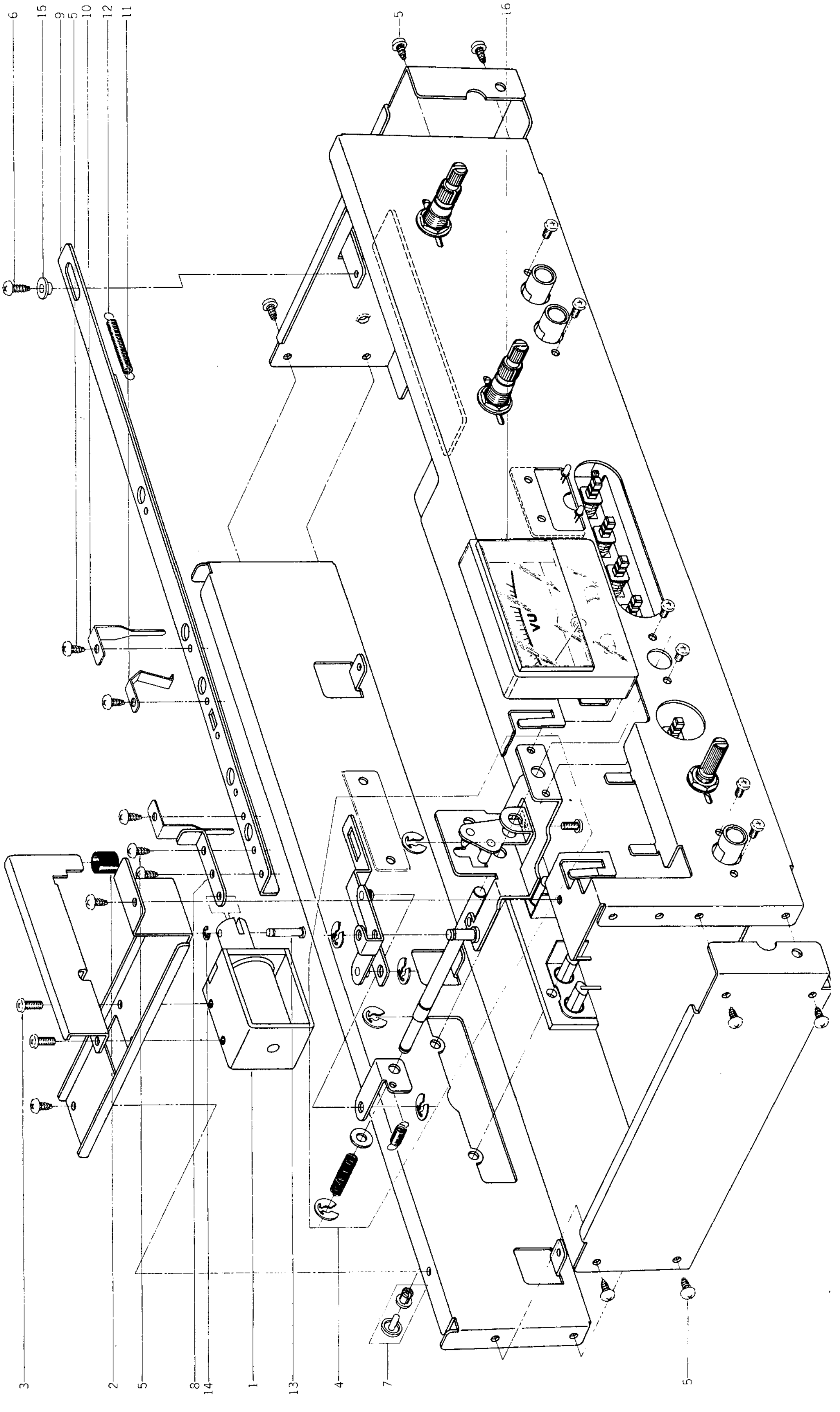
(3) VOL. P.C BOARD (TH-5002) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
(3)-VR1,2	EV308995	Double Axial 2 Throw Vol. DM20R 50 kA×2	36-18-9

(4) REC, LED P.C BOARD (TH-5001B) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
(4)-D1,2	ED249377	LED GL-3AR1	45-15-14

9. ILLUSTRATION OF AMP ASSEMBLY BLOCK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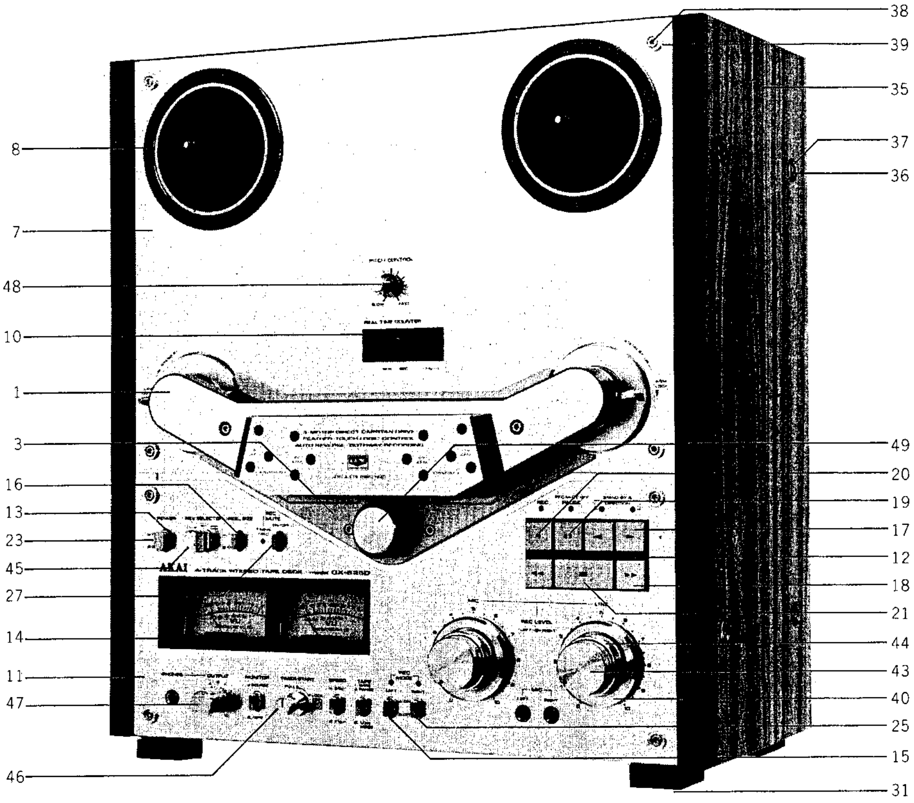
9) AMP ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.
	REVERSE PLUNGER BLOCK		
9-1	EP310447	Plunger 1240TLT	44-1-107
9-2	MB606712	Stopper Rubber KJ	KJ-2060
9-3	ZS422076	Screw, pan head 3x5	
	TIMER BLOCK		
9-4	BZ308285	Timer Block Comp. GX-635D	TH-2060
	AMP ASSEMBLY BLOCK		
9-5	ZS325495	Tapping Screw #2, 3x6 (BR)	
9-6	ZS447840	Tapping Screw #2, 3x8 (BR)	
9-7	ZW263946	Nylon Rivet 4x5	2-7-57
9-8	MZ301084	Reverse Joint	NE-5219
9-9	ML301123	Reverse Arm	NE-5218
9-10	ZG301072	Reverse SW. Spring (A)	NE-5206
9-11	ZG301073	Reverse SW. Spring (B)	NE-5207
9-12	ZG312400	Spring T1-4.0/0.4-31.5	
9-13	MH257477	Connecting Pin	RD-211
9-14	ZW270088	'E' Ring 1.9M	6-1-9
9-15	ZW625241	Graduated Washer	MY-1013
9-16	EM309051	VU Meter VU-50-003 (U/T, CSA, AAL, CEE, UK)	46-1-209
9-17x	EM309050	VU Meter VU-50-005 (JPN)	46-1-199

10. PHOTO OF FINAL ASSEMBLY BLOCK



10) FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.
	HEAD COVER BLOCK		
10-1	BZ308220	Head Cover Block Comp. GX-635D (U/T) (CSA, CEE, UK)	TH-6055
10-2x	BZ308219	Head Cover Block Comp. GX-635D (AAL)	TH-6055
	HEAD COVER BASE BLOCK COMP.		
10-3	SC308813	Head Cover Base	TH-6040
10-4x	ML308810	Head Cover Holder (A)	TH-6038
10-5x	ML308811	Head Cover Holder (B)	TH-6038
10-6x	ZS608321	Screw, pan head 3x6, w=8	
	MECHA PANEL BLOCK		
10-7	BD308215	Mecha Panel Block Comp. GX-635D	
10-8	SE301134	Reel Table Escutcheon (2-B)	TD-6021
10-9x	ZW575730	Speed Nut (P Type) (3)	6-3-6
10-10	SE308784	Counter Escutcheon	TH-6014
	AMP PANEL BLOCK		
10-11	BD308217	Amp Panel Block Comp. GX-635D	
10-12	SE308781	Operate Escutcheon	TH-6011
10-13	SE308786	Button Escutcheon	TH-6016
10-14	SE308780	Meter Escutcheon	TH-6010
10-15	SE306143	Button Escutcheon (A)	CN-6308
10-16	SE305651	Button Escutcheon (B)	CN-6352
10-17	SB308911	Operate Button (A) Part GX-635D	TH-6018
10-18	SB308910	Operate Button (B) Part GX-635D	TH-6020
10-19	SB308909	Operate Button (C) Part GX-635D	TH-6021
10-20	SB308908	Operate Button (D) Part GX-635D	TH-6022
10-21	SB308907	Operate Button (E) Part GX-635D	TH-6019
10-22x	SZ311866	Ring Felt	TH-6054
10-23	SB308785	Button (A)	TH-6015
10-24x	ZG308787	Button Spring	TH-6017
10-25	SK305653	Push Button (A)	CN-6309
10-26x	ZG305657	Button Spring	CN-6310
10-27	SK305654	Push Button (B)	CN-6309
10-28x	ZG305657	Button Spring	CN-6310
	FINAL ASSEMBLY BLOCK		
10-29x	ZS325495	Tapping Screw #2, 3x6 (BR)	
10-30x	SP308778	Bottom Plate	TH-6008
10-31	SA301411	Square Foot Part GX-215D	2-6-15

Ref. No.	Parts No.	Description	Schematic No.
10-32x	ZS413234	Screw, pan head 4x12	
10-33x	ZS201341	Screw, truss head 4x8 (Black)	
10-34x	BC312396	Upper Cover (B)	NE-6201
10-35	SP308805	Side Plate	TH-6034
10-36	ZS520525	Screw, binding head 4x25 (Black)	
10-37	ZW548010	Spot Facing Washer	MU-6028
10-38	ZS613901	Panel Screw	CW-6031
10-39	ZW308796	Panel Washer	TH-6030
10-40	SZ308782	Memory Ring	TH-6012
10-41x	ML308783	Memory Ring Holder	TH-6013
10-42x	SZ311866	Ring Felt	TH-5054
10-43	SK308791	Double Knob (Upper)	TH-6025
10-44	SK308792	Double Knob (Lower)	TH-6026
10-45	SK308818	Knob (D)	TH-6046
10-46	SK308795	Knob (C)	TH-6029
10-47	SK308793	Knob (A)	TH-6027
10-48	SK308794	Knob (B)	TH-6028
10-49	SK632610	Pinch Roller Cap (B) Part TE	TW-6019
10-50x	SP308798	Back Board (B) (U/T)	TH-6031,6033
10-51x	SP308797	Back Board (A) (JPN)	TH-6031,6032
10-52x	SP308800	Back Board (D) (CSA, AAL)	TH-6031,6050
10-53x	SP308799	Back Board (C) (CEE, UK)	TH-6031,6049
10-54x	ZS297641	Tapping Screw #2, 3x8 (Bind) W=10	
10-55x	ZS422965	Screw, pan head 3x15	

11. LIST OF INTERCHANGEABLE SEMICONDUCTORS

If, while servicing, the original parts cannot be obtained, the interchangeable parts listed below can be substituted.

Original Parts			Interchangeable Parts	
Description	Parts No.	Utilizing P.C Board	Description	Parts No.
2SC458 (D)	ET308975	TH-5001A TH-5003A	2SC945L (P)	ET638504
2SC458LG (D)	ET352146	TH-5001A TH-5003A	2SC1844 (E) (F)	ET308954
2SC945L (P)	ET638504	TH-5001A TH-5003A	2SC458 (D)	ET308975
2SC945L (Q) (P)	ET639437	TH-5001A TH-5003A	2SC1815 (GR)	ET308980
2SC2130 (H)	ET311336	TH-5001A TH-5003A	2SC711 (H)	ET429748
2SK68 (M)	ET308978	TH-5001A TH-5003A	2SK117 (GR)	ET303697
M53200P	EI430661	TH-1015	MB400/7400	EI304165
M53202P	EI633960	TH-1015	MB417/7402	EI305238
M53204P	EI573840	TH-1015	MB418/7404	EI304166
1S2473 1S2473VE	ED624903 ED560913	TH-5001A TH-5003A TH-1015	1S1588	ED557447
1K34A-LR 1K34A-LH	ED308952 ED308953	TH-5001A TH-5003A TH-1015	1N34A	ED219464
W03B	ED306109	TH-1015	10D1	ED224526
10D4	ED224550	TH-1015	1N4004	ED570273
SR-105D	ED698826	TH-2043 TH-2046	GL-3AR1	ED249377
GL-3AR1	ED249377	TH-5001B TH-5003B	SR-105D	ED698826

Chart-8

NOTE: Semi-conductors not listed on chart must be replaced by the original parts.

INDEX

Parts No.	Ref. No. & Symbol No.
BA308262	(1)-1
BA308263	(1)-2
BA308264	(1)-3
BA308275	(2)-1
BA308296	(2)-2
BC312396	10-34x
BD308215	10-7
BD308217	10-11
BH308277	2-1x
BM308310	3-1x
BM587518	4-11
BR587553	4-1x
BT308918	6-4
BT308919	6-5x
BT308920	6-7x
BT308921	6-6x
BZ308219	10-2x
BZ308220	10-1
BZ308227	5-1x
BZ308228	5-2x
BZ308285	9-4
BZ308315	3-7
EC220410	(1)-C7
EC249592	6-11
EC294118	6-2x
EC295997	(1)-C1
EC301320	6-3x
EC304186	(1)-C39,40
EC304708	(1)-C35to37
EC305677	(2)-C3
EC305677	(2)-C29
EC305677	(2)-C32
EC306420	(2)-C20
EC306438	(2)-C36
EC306987	(2)-C30
EC308940	(1)-C44,45
EC308943	(1)-C48
EC308950	(1)-C46,47
EC308990	(2)-C25
EC310366	(1)-C52
EC310368	(1)-C20
EC310370	(1)-C19
EC310372	(1)-C101to128
EC310374	(1)-C53
EC313265	(2)-C48
EC313577	(1)-C49
EC313624	(2)-C15
EC313868	(2)-C1
EC313868	(2)-C22
EC405898	(2)-C30
EC450270	(1)-C4
EC459145	(1)-C5
EC516701	(2)-C29
EC551160	6-1x
EC558202	(2)-TC1,2
ED224550	(1)-D51,52
ED224550	(1)-D54
ED224550	(1)-D56
ED249377	(4)-D1,2
ED283138	7-33
ED303005	7-34
ED306109	(1)-D49
ED308941	(1)-D9
ED308941	(1)-D50
ED308945	(1)-D1
ED308945	(1)-D3
ED308951	(1)-D5
ED308952	(1)-D10,11
ED308952	(1)-D14
ED308952	(1)-D17
ED308952	(1)-D33,34
ED308952	(1)-D36to38
ED308952	(1)-D44
ED308952	(1)-D46
ED308952	(2)-D1,2
ED308952	(2)-D4
ED308953	(1)-D12,13
ED308953	(1)-D28
ED308953	(1)-D41,42
ED308953	(1)-D45
ED309069	(1)-D4
ED313623	(1)-D2
ED510772	(1)-D6
ED560913	(1)-D7,8
ED560913	(1)-D16
ED560913	(1)-D19to22
ED560913	(1)-D26
ED560913	(1)-D29to32
ED560913	(1)-D39,40
ED560913	(1)-D43
ED560913	(1)-D47,48
ED560913	(1)-D53
ED560913	(1)-D55
ED560913	(1)-D57
ED560913	(2)-D3
ED560913	(2)-D5to8
ED624903	(1)-D15
ED624903	(1)-D18
ED624903	(1)-D24
ED624903	(1)-D27
ED624903	(1)-D35
ED698826	7-11
ED698826	7-35
EF308923	6-31x
EF563681	6-26
EF563703	6-27x
EF575932	6-29x
EF593706	6-33x
EF616555	6-28x
EF623103	6-34x
EF659698	6-30x
EF683313	6-32x
EI306141	(2)-IC1
EI308936	(1)-IC1
EI430661	(1)-IC2,3
EI573840	(1)-IC5
EI633960	(1)-IC4
EJ249333	(2)-P1,2
EJ249366	(2)-P3,4
EJ249467	6-24
EJ262732	6-23
EJ301513	6-19x
EJ305629	(2)-J1
EJ305739	(2)-J2
EJ306985	(2)-J3
EJ307274	6-13
EJ308986	(2)-J3
EJ310390	2-30
EJ310391	2-31x
EJ310392	2-32
EJ310446	2-33x
EM309050	9-17x
EM309051	9-16
EO301448	(2)-L1
EO301467	(2)-L2
EO308974	(2)-L4
EO308982	(2)-L3
EO313608	(2)-L5,6
EP280743	(1)-RL6
EP308949	(1)-RL5
EP308973	(2)-RL1
EP309056	7-3
EP309061	(1)-RL1to4
EP310447	7-24
EP310447	9-1
EP310448	7-13
ER300820	(1)-CR1to14
ER306299	(2)-R82
ER308955	(1)-R112
ER308956	(1)-R111
ER309092	(1)-R110
ES301435	(2)-SW1
ES301436	(2)-SW4
ES301715	(2)-SW5
ES306292	(2)-SW6
ES308913	7-9
ES308914	7-8
ES308925	7-12
ES308929	5-8
ES308983	(2)-SW3
ES308984	(2)-SW2
ES309058	7-50x
ES309059	7-49x
ES309094	(1)-SW1
ES313622	7-48
ES313792	6-20x
ES573478	7-51
ET208012	(2)-TR16
ET307349	(1)-TR3
ET308937	(1)-TR16to19
ET308937	(1)-TR22
ET308937	(1)-TR24,25
ET308947	(1)-TR13
ET308975	(2)-TR4
ET308978	(2)-TR11
ET311336	(2)-TR12
ET312497	(1)-TR1
ET352146	(2)-TR1to3
ET352146	(2)-TR7to9
ET399846	(1)-TR21
ET522268	(1)-TR20
ET554657	(1)-TR9,10
ET554657	(1)-TR12
ET638504	(2)-TR5,6
ET638504	(2)-TR10
ET639437	(1)-TR2
ET639437	(1)-TR4to8
ET639437	(1)-TR11
ET639437	(1)-TR14,15
ET639437	(1)-TR23
ET639437	(1)-TR26to32
ET639437	(2)-TR13to15
ET639437	(2)-TR17to23
EV301437	(2)-VR6
EV302718	(1)-VR1
EV305636	(2)-VR3,4
EV305637	(2)-VR1,2
EV306989	(2)-VR5
EV308917	7-2
EV308966	(2)-VR7
EV308995	(3)-VR1,2
EV309071	(1)-VR2
EW305691	6-18x
EW306427	6-17x
EW306428	6-16
EW308922	5-6
EZ308712	5-17
EZ631945	6-15
HA308686	2-18
HA308687	2-19
HA309409	2-16
HA309410	2-17
HB308681	2-9
HB308685	2-13
HB309407	2-10
HB309408	2-11
HE308149	2-21
HP308146	2-23
HR308148	2-22
HZ301366	2-24
HZ301777	2-8
HZ308709	5-21
HZ308710	5-19
HZ309411	2-20x
HZ528581	2-4
MB308701	7-69
MB308714	5-28
MB428343	7-16
MB606712	7-38
MB606712	9-2
MC308242	7-1
MH257477	9-13
MH578957	2-5
MI308707	5-16
ML301123	9-9
ML308677	7-29
ML308737	7-28
ML308783	10-41x
ML308810	10-4x
ML308811	10-5x
ML308904	7-65
ML308905	7-25
ML533643	7-57
ML582041	7-52
ML582074	7-56
MP424023	7-62
MR308713	5-27
MR308715	5-30
MS342000	4-2
MS527591	7-21
MT314987	7-53
MT436860	4-8
MT534677	4-4
MT534688	4-6
MV368886	3-8
MZ301084	9-8
MZ314998	7-54
MZ397181	7-26
MZ535072	5-20
MZ585900	3-9
MZ597690	3-10
SA301411	10-31
SA312529	7-45x
SB308785	10-23
SB308907	10-21
SB308908	10-20
SB308909	10-19
SB308910	10-18
SB308911	10-17
SC308813	10-3
SE301134	10-8
SE305651	10-16
SE306143	10-15
SE308780	10-14
SE308781	10-12
SE308784	10-10
SE308786	10-13
SK305653	10-25
SK305654	10-27
SK308791	10-43
SK308792	10-44
SK308793	10-47
SK308794	10-48
SK308795	10-46
SK308818	10-45
SK597633	3-5
SK632610	10-49
SP308778	10-30x
SP308797	10-51x
SP308798	10-50x
SP308799	10-53x
SP308800	10-52x
SP308805	10-35
SZ308717	5-3
SZ308718	5-5
SZ308782	10-40
SZ311866	10-22x
SZ311866	10-42x
ZG301072	9-10
ZG301073	9-11
ZG301340	7-59
ZG303300	2-12
ZG305657	10-26x
ZG305657	10-28x
ZG308722	5-11
ZG308728	7-20
ZG308734	7-6
ZG308787	10-24x
ZG312399	5-23
ZG312400	9-12
ZG313099	7-67
ZG317496	4-9
ZG466312	2-7
ZG540617	4-3
ZG567685	5-15
ZG576314	7-30
ZG580522	7-27
ZG672478	7-72
ZS201341	10-33x
ZS201778	2-28

INDEX

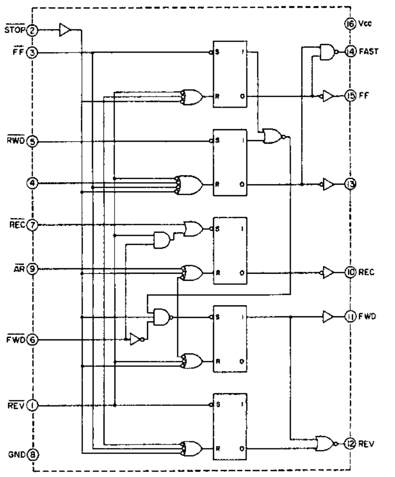
Parts No.	Ref. No. & Symbol No.
ZS297641	10-54x
ZS302720	7-31
ZS308931	5-9
ZS309096	7-68x
ZS323728	7-47
ZS325495	6-12
ZS325495	7-44x
ZS325495	9-5
ZS325495	10-29x
ZS413201	2-3
ZS413201	3-12
ZS413201	7-37x
ZS413234	10-32x
ZS417150	7-46x
ZS417216	5-4
ZS417216	7-55
ZS417407	2-15
ZS419670	4-7
ZS419670	7-39
ZS421740	6-14
ZS421806	(1)-4
ZS422076	6-22x
ZS422076	7-10
ZS422076	9-3
ZS422965	5-18
ZS422965	10-55x
ZS424056	4-10
ZS435273	6-9
ZS444262	7-23
ZS447761	6-21x
ZS447840	9-6
ZS460440	2-25
ZS463353	6-25
ZS479474	5-22
ZS520525	10-36
ZS527681	7-64
ZS592378	7-4x
ZS608095	2-26
ZS608308	3-6x
ZS608321	5-14
ZS608321	7-58x
ZS608321	10-6x
ZS608501	2-14
ZS613901	10-38
ZW260076	7-18x
ZW263946	9-7
ZW265522	2-6
ZW270088	4-5
ZW270088	7-7
ZW270088	9-14
ZW270101	5-13
ZW270101	7-61x
ZW270123	7-17
ZW270156	7-60x
ZW273756	7-32
ZW273756	(1)-5
ZW273914	2-2
ZW273914	7-40x
ZW274026	7-42x
ZW290283	7-15
ZW302896	5-7
ZW307294	5-26
ZW308796	10-39
ZW308916	6-8x
ZW308927	5-24
ZW308928	5-29
ZW308930	5-12
ZW309054	7-36
ZW309055	2-27
ZW313593	7-5
ZW313822	5-25x
ZW330412	7-70x
ZW330423	7-71x
ZW376391	7-63
ZW413188	7-41x
ZW413267	6-10
ZW413278	3-11
ZW413278	7-22
ZW413278	7-43x
ZW420682	7-19
ZW548010	10-37
ZW550697	5-10
ZW575730	10-9x
ZW580173	7-66
ZW597543	3-2
ZW597622	3-4
ZW605698	3-3
ZW625241	9-15
ZW668621	2-29
ZW678723	7-14

SECTION 3

SCHEMATIC DIAGRAM

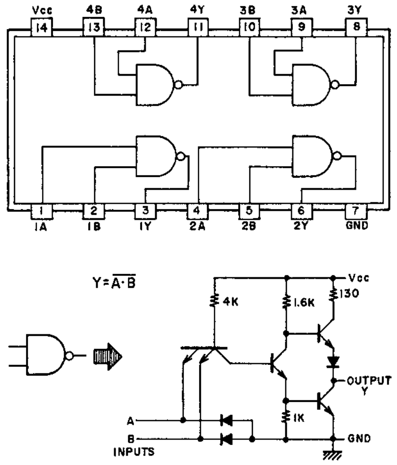
1. GX-635D/DB NO. 2-1 1562416A SCHEMATIC DIAGRAM
2. GX-635D NO. 2-2 1562417A AMP SCHEMATIC DIAGRAM

M54410P



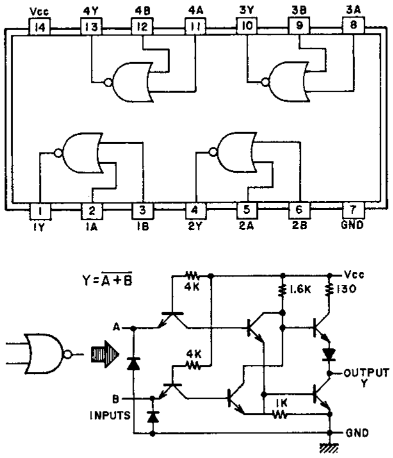
$\overline{\text{STOP}}$ 2
$\overline{\text{FF}}$ 3
$\overline{\text{RWD}}$ 5
4
$\overline{\text{REC}}$ 7
$\overline{\text{AR}}$ 9
$\overline{\text{FWD}}$ 6
$\overline{\text{REV}}$ 1
GND 8
16 Vcc
14 FAST
15 FF
13
10 REC
11 FWD
12 REV
S
R
1
0

M53200P



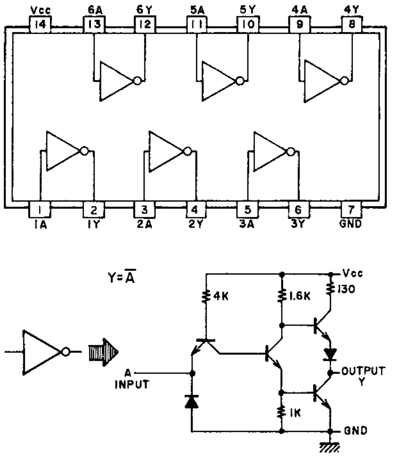
Vcc
4B
4A
4Y
3B
3A
3Y
14
13
12
11
10
9
8
1
2
3
4
5
6
7
1A
1B
1Y
2A
2B
2Y
GND
Y=$\overline{A\cdot B}$
Vcc
4K
1.6K
130
OUTPUT Y
1K
A
B
INPUTS
GND

M53202P



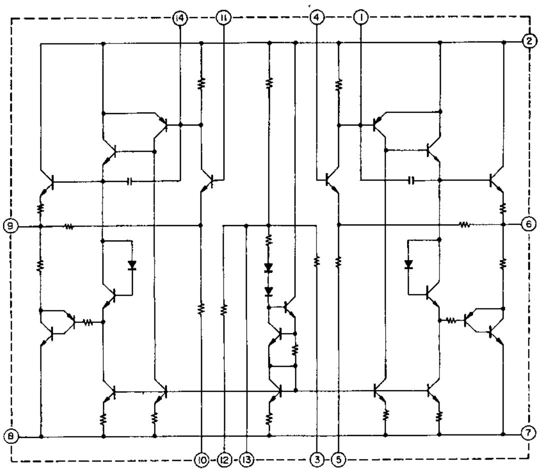
Vcc
4Y
4B
4A
3Y
3B
3A
14
13
12
11
10
9
8
1
2
3
4
5
6
7
1Y
1A
1B
2Y
2A
2B
GND
Y=$\overline{A+B}$
4K
Vcc
1.6K
130
A
4K
OUTPUT Y
B
INPUTS
1K
GND

M53204P



Vcc
6A
6Y
5A
5Y
4A
4Y
14
13
12
11
10
9
8
1
2
3
4
5
6
7
1A
1Y
2A
2Y
3A
3Y
GND
Y=$\overline{A}$
Vcc
4K
1.6K
130
A
INPUT
OUTPUT Y
1K
GND

LA4170



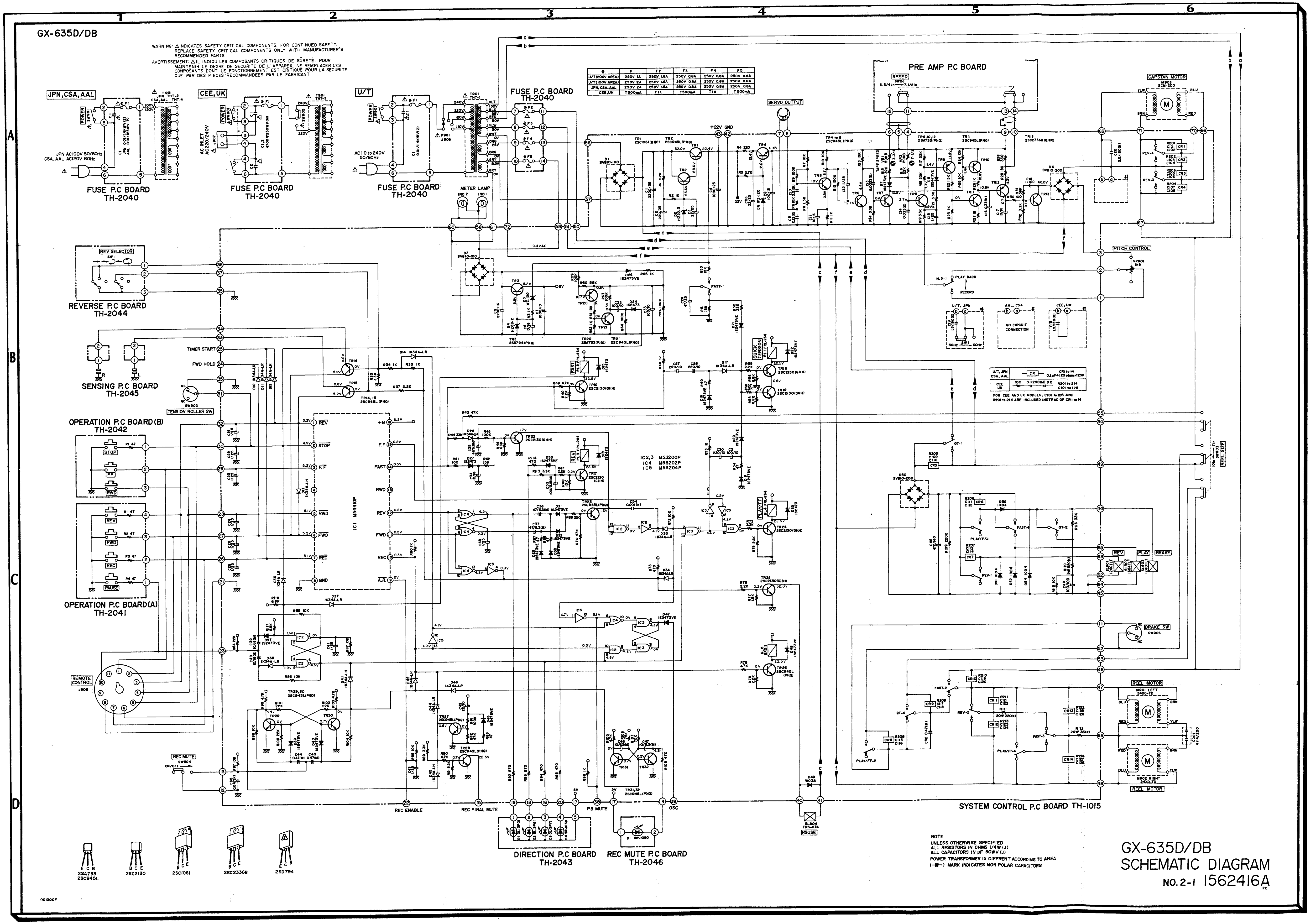
14
11
4
1
2
9
6
8
7
10
12
13
3
5

GX-635D/DB

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

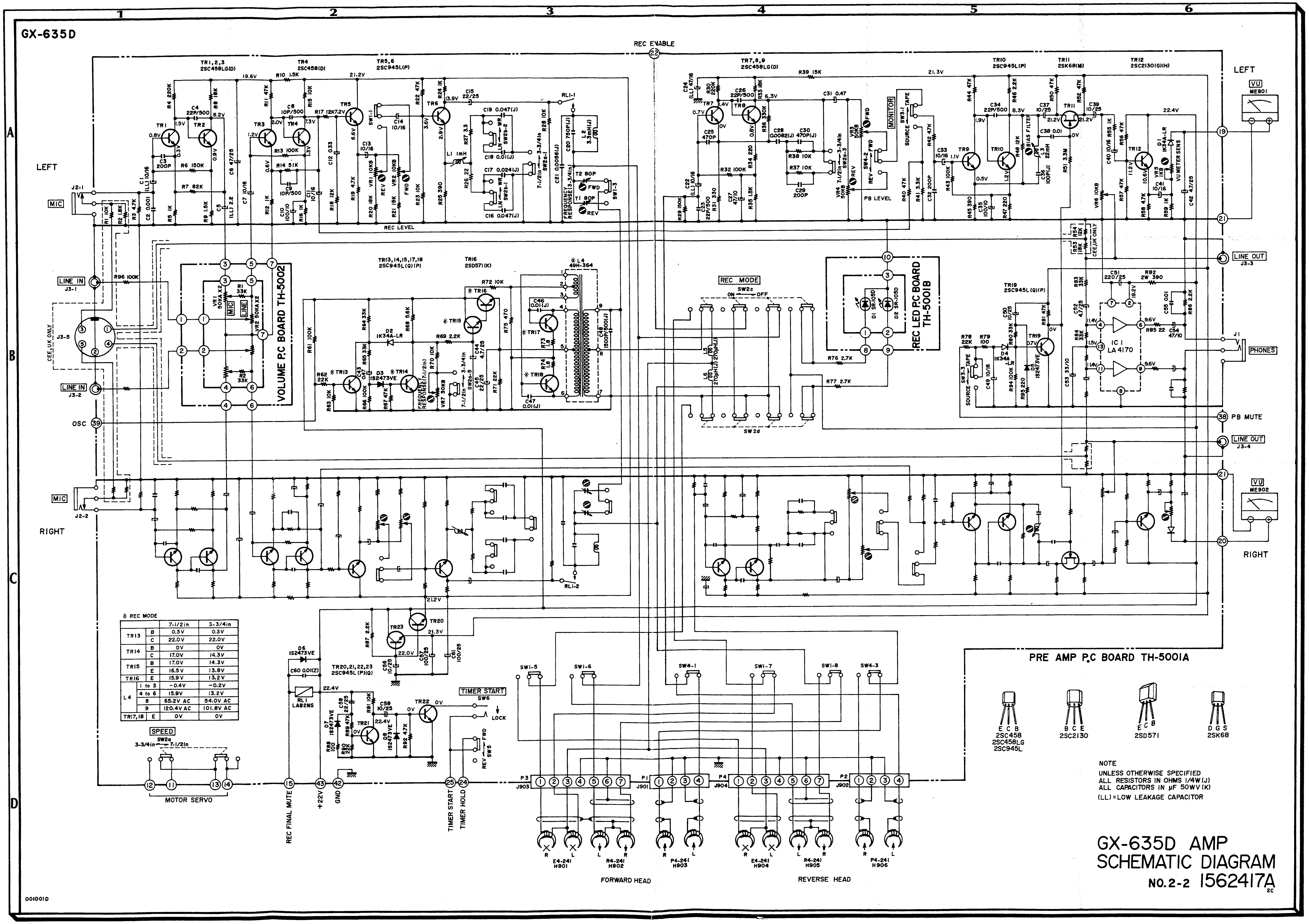
AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

*	F1	F2	F3	F4	F5
U/T(200V AREA)	250V 1A	250V 1.6A	250V 0.8A	250V 0.8A	250V 0.8A
U/T(100V AREA)	250V 2A	250V 1.6A	250V 0.8A	250V 0.8A	250V 0.8A
JPN, CSA, AAL	250V 2A	250V 1.6A	250V 0.8A	250V 0.8A	250V 0.8A
CEE, UK	T500mA	T1A	T500mA	T1A	T500mA


1
2
3
4
5
6
A
B
C
D
JPN,CSA,AAL
CEE,UK
U/T
FUSE P.C BOARD TH-2040
FUSE P.C BOARD TH-2040
FUSE P.C BOARD TH-2040
FUSE P.C BOARD TH-2040
JPN AC100V 50/60Hz
CSA,AAL AC120V 60Hz
AC INLET AC220/240V
AC110 to 240V 50/60Hz
METER LAMP
PRE AMP P.C BOARD
SPEED
SERVO OUTPUT
+22V GND
CAPSTAN MOTOR
PITCH CONTROL
REV SELECTOR
REVERSE P.C BOARD TH-2044
SENSING P.C BOARD TH-2045
TIMER START
FWD HOLD
TENSION ROLLER SW
OPERATION P.C BOARD (B) TH-2042
STOP
FF
RWD
REV
FWD
REC
PAUSE
OPERATION P.C BOARD (A) TH-2041
REMOTE CONTROL
REC MUTE
IC1 M54410P
IC2,3 M53200P
IC4 M53202P
IC5 M53204P
QUICK TENSION
FAST
PLAY/FF
REEL SIZE
BRAKE SW
REEL MOTOR
REV
PLAY
BRAKE
REC ENABLE
REC FINAL MUTE
PB MUTE
OSC
PAUSE
DIRECTION P.C BOARD TH-2043
REC MUTE P.C BOARD TH-2046
SYSTEM CONTROL P.C BOARD TH-1015
2SA733 2SC945L
2SC2130
2SC1061
2SC2336B
2SD794

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN μF 50WV (J)
POWER TRANSFORMER IS DIFFRENT ACCORDING TO AREA
(—⊣⊢—) MARK INDICATES NON POLAR CAPACITORS

GX-635D/DB
SCHEMATIC DIAGRAM
NO.2-1 1562416A 2C


GX-635D
1
2
3
4
5
6
A
B
C
D
REC ENABLE
22
LEFT
RIGHT
MIC
J2-1
J2-2
LINE IN
J3-1
J3-2
J3-5
CEE,UK ONLY
OSC
39
TR1,2,3 2SC458LG(D)
TR4 2SC458(D)
TR5,6 2SC945L(P)
TR7,8,9 2SC458LG(D)
TR10 2SC945L(P)
TR11 2SK68(M)
TR12 2SC2130(G)(H)
TR13,14,15,17,18 2SC945L(Q)(P)
TR16 2SD571(K)
TR19 2SC945L(Q)(P)
TR20,21,22,23 2SC945L(P)(Q)
REC LEVEL
VOLUME P.C BOARD TH-5002
VR1 50KA X2
VR2 50KA X2
REC LED P.C BOARD TH-5001B
D1 SR-105D
D2 SR-105D
REC MODE
SW2c
ON
OFF
SW2d
MONITOR
SOURCE
TAPE
SW3-1
SW3-3
PB LEVEL
BIAS FILTER
VU METER SENS
IC1 LA4170
LINE OUT
J3-3
J3-4
PHONES
J1
PB MUTE
38
VU
ME901
ME902
19
21
20
※ L4 49H-364
RL1-1
RL1-2
RL1 LA82NS
D6 1S2473VE
C60 0.01(Z)
21.2V
21.3V
22.4V
TIMER START
SW6
LOCK
SW5
FWD
REV
SPEED
SW2a
3-3/4in
7-1/2in
12
11
13
14
MOTOR SERVO
15
REC FINAL MUTE
43
+22V
42
GND
25
TIMER START
24
TIMER HOLD
SW1-5
SW1-6
SW4-1
SW1-7
SW1-8
SW4-3
P3
J903
P1
J901
P4
J904
P2
J902
E4-241 H901
R4-241 H902
P4-241 H903
E4-241 H904
R4-241 H905
P4-241 H906
FORWARD HEAD
REVERSE HEAD
PRE AMP P.C BOARD TH-5001A
E C B
2SC458
2SC458LG
2SC945L
B C E
2SC2130
E C B
2SD571
D G S
2SK68
001001D

※ REC MODE

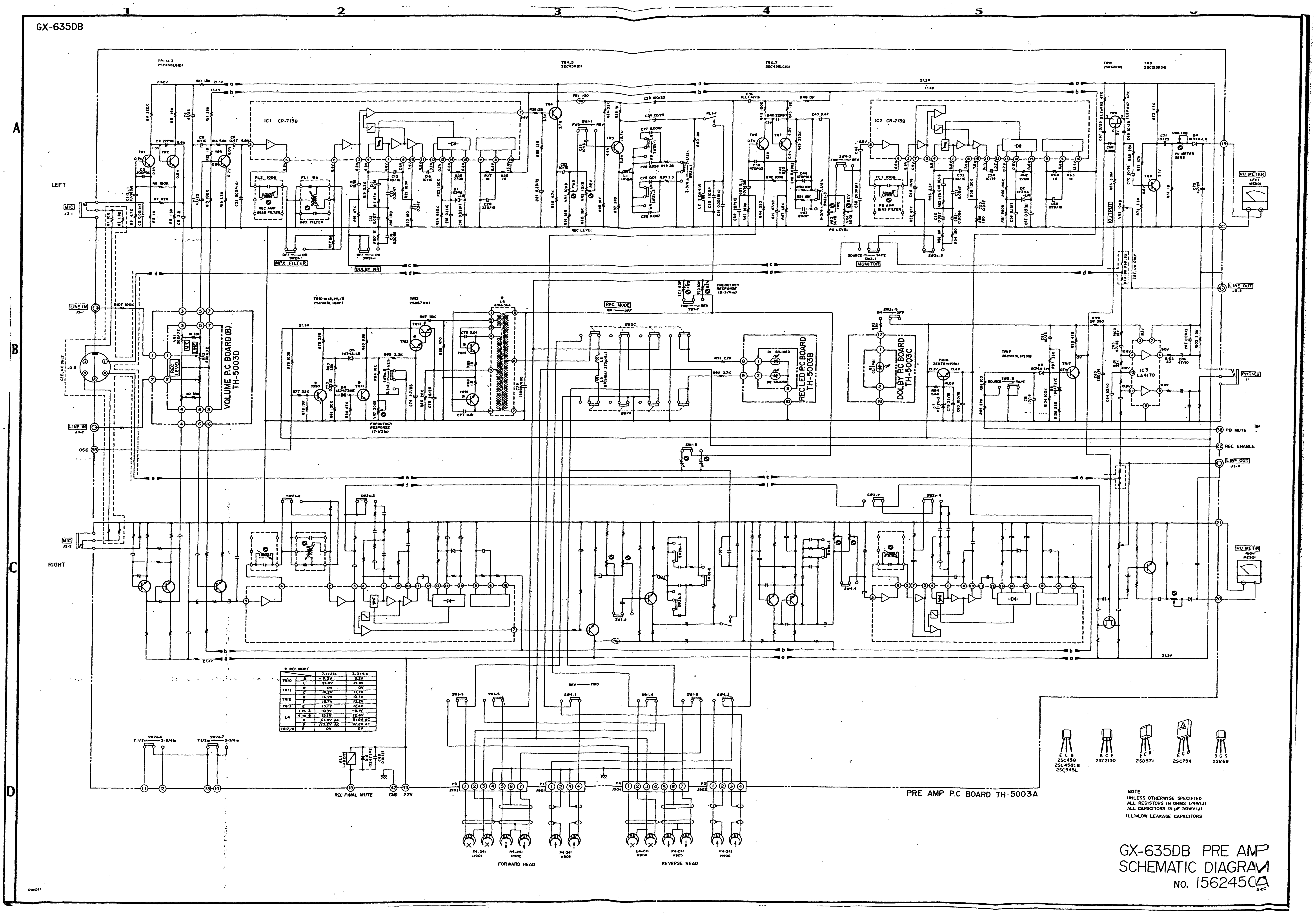
		7-1/2in	3-3/4in
TR13	B	0.3V	0.3V
	C	22.0V	22.0V
TR14	B	0V	0V
	C	17.0V	14.3V
TR15	B	17.0V	14.3V
	E	16.5V	13.8V
TR16	E	15.9V	13.2V
L4	1 to 3	-0.4V	-0.2V
	4 to 6	15.9V	13.2V
	8	65.2V AC	54.0V AC
	9	120.4V AC	101.8V AC
TR17,18	E	0V	0V

NOTE

UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN µF 50WV(K)
(LL)=LOW LEAKAGE CAPACITOR

GX-635D AMP SCHEMATIC DIAGRAM

NO.2-2 1562417A
2C


GX-635DB
LEFT
RIGHT
MIC J2-1
MIC J2-2
LINE IN J3-1
LINE IN J3-2
OSC
IC1 CR-7138
IC2 CR-7138
IC3 LA4170
MPX FILTER
DOLBY NR
MONITOR
REC MODE
REC LEVEL
PB LEVEL
VOLUME P.C BOARD (B) TH-5003D
REC LED P.C BOARD TH-5003B
DOLBY P.C BOARD TH-5003C
VU METER LEFT
VU METER RIGHT
LINE OUT J3-3
LINE OUT J3-4
PHONES J1
PB MUTE
REC ENABLE
REC FINAL MUTE
GND
22V
FORWARD HEAD
REVERSE HEAD
PRE AMP P.C BOARD TH-5003A
E C B 2SC458 2SC458LG 2SC945L
B C E 2SC2130
E C B 2SD571
E C B 2SC794
D G S 2SK68

✽ REC MODE

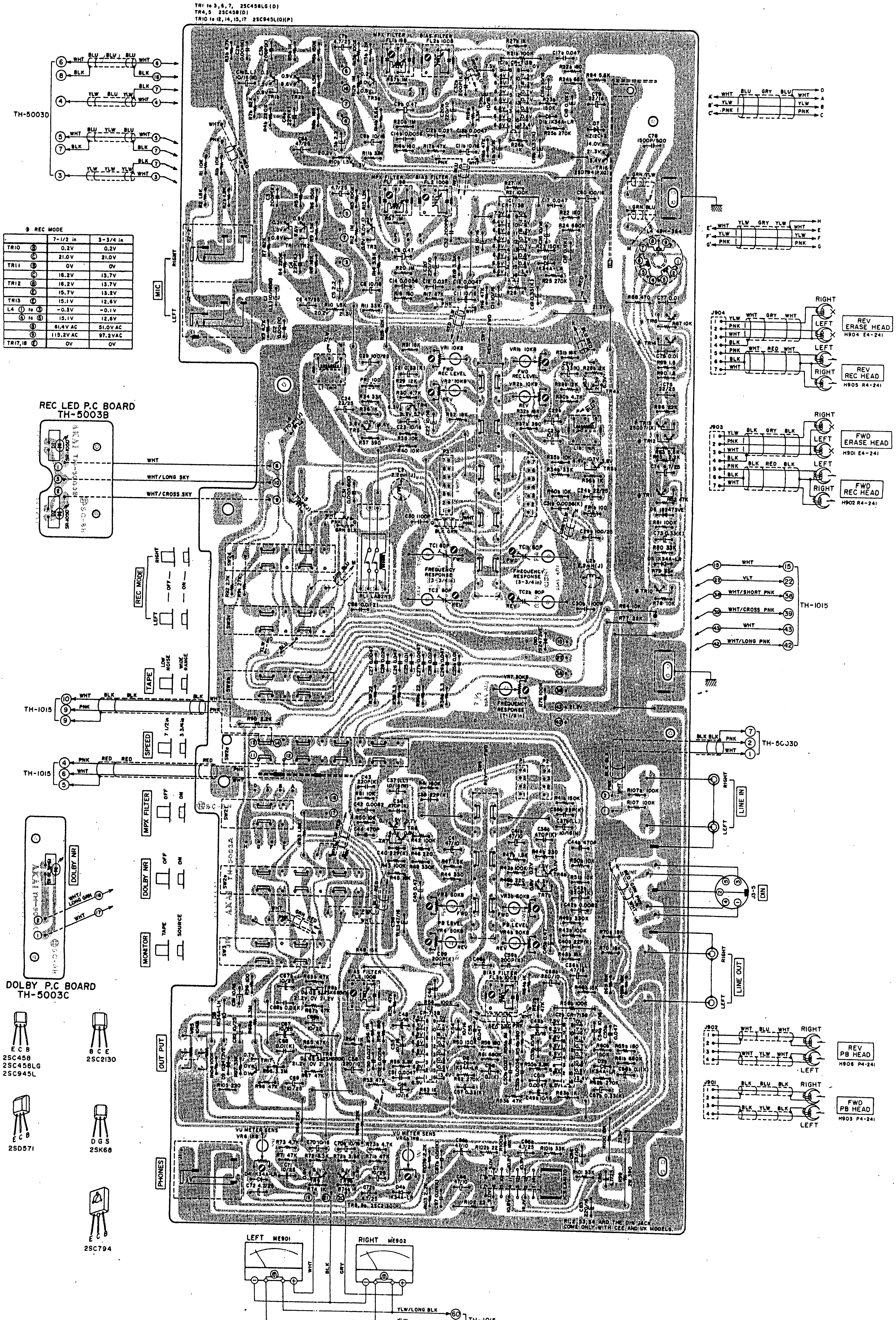
		7-1/2in	3-3/4in
TR10	B	-0.2V	0.2V
	C	21.0V	21.0V
TR11	B	0V	0V
	C	16.2V	13.7V
TR12	B	16.2V	13.7V
	E	15.7V	13.2V
TR13	E	15.1V	12.6V
L4	1 to 3	-0.3V	-0.1V
	4 to 6	15.1V	12.6V
	8	61.4V AC	51.0V AC
	9	113.2V AC	97.2V AC
TR17, 18	E	0V	0V

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)
(LL)=LOW LEAKAGE CAPACITORS

GX-635DB PRE AMP SCHEMATIC DIAGRAM
NO. 156245C

AKAI-00351 / DRUCK 3

PRE AMP P.C BOARD TH-5003A (3ED), REC LED P.C BOARD TH-5003B AND DOLBY P.C BOARD TH-5003C


TR1 to 3, 6, 7, 2SC458LG (D)
TR4, 5 2SC458(D)
TR10 to 12, 14, 15, 17 2SC945L(Q)(P)
TH-5003D
MIC
RIGHT
LEFT
REC LED P.C BOARD
TH-5003B
WHT
WHT/LONG SKY
WHT/CROSS SKY
REC MODE
RIGHT
LEFT
OFF
ON
TAPE
LOW NOISE
WIDE RANGE
TH-1015
SPEED
7-1/2 in
3-3/4 in
MPX FILTER
DOLBY NR
MONITOR
TAPE
SOURCE
DOLBY NR
WHT/LONG GRN
DOLBY P.C BOARD
TH-5003C
E C B
2SC458
2SC458LG
2SC945L
B C E
2SC2130
E C B
2SD571
D G S
2SK68
2SC794
OUT PUT
PHONES
VU METER SENS
LEFT ME901
RIGHT ME902
YLW/LONG BLK
YLW
VU METER
MPX FILTER
BIAS FILTER
FWD REC LEVEL
REV
FREQUENCY RESPONSE (3-3/4 in)
FREQUENCY RESPONSE (7-1/2 in)
RL1 LAB2N5
PB LEVEL
R1, 2, 53, 54 AND THE DIN JACK COME ONLY WITH CEE AND UK MODELS.
J904
REV ERASE HEAD
H904 E4-241
REV REC HEAD
H905 R4-241
J903
FWD ERASE HEAD
H901 E4-241
FWD REC HEAD
H902 R4-241
WHT/SHORT PNK
WHT/CROSS PNK
WHT/LONG PNK
TH-1015
TH-5003D
LINE IN
DIN
J3-3
LINE OUT
J902
REV PB HEAD
H906 P4-241
J901
FWD PB HEAD
H903 P4-241
RIGHT
LEFT

* REC MODE

		7-1/2 in	3-3/4 in
TR10	Ⓑ	0.2V	0.2V
	Ⓒ	21.0V	21.0V
TR11	Ⓑ	0V	0V
	Ⓒ	16.2V	13.7V
TR12	Ⓑ	16.2V	13.7V
	Ⓔ	15.7V	13.2V
TR13	Ⓔ	15.1V	12.6V
L4	① to ③	-0.3V	-0.1V
	④ to ⑥	15.1V	12.6V
	⑧	61.4V AC	51.0V AC
	⑨	115.2V AC	97.2VAC
TR17, 18	Ⓔ	0V	0V

AKAI

Kundendienst
Informationen

Akai Deutschland GmbH
Am Siebenstein 4
6072 Dreieich-Buchschlag
Telefon 06103/64096
Telex 04185332 akaid

Nr. A-o9/8o   Dreieich, 23.o7.198o wfs

Betr.: GX-635 D/DB

1. GX-635 D/DB

a. Zur Verbesserung der Übersprechwerte wird das genannte Gerät mit einem neuen Wiedergabekopf ausgestattet.

Alter Kopf: P 4-241 Best.-Nr. HP-3o8146
Neuer Kopf: P 4-251 Best.-Nr. HP-318522

Die Köpfe sind untereinander austauschbar.

Diese Änderung wird werksseitig ab August 1979 durchgeführt.

AS-oo81

b. Zur Stabilisierung des Einschaltvorganges bei "Timer"-Betrieb (Bandschlaufenbildung durch zu lockeren "Tension-arm") sind die beiden folgenden Bauteile zu ändern:

Alt: Zener-Diode WZ-12o Best.-Nr. ED-51o772 ("D-5") (Steuerplatine)
Neu: Zener-Diode WZ-13o Best.-Nr. ED-539976 ("D-5") "

Alt: Elko (Vert.-Type) 1oo uF, 1oo V Best.-Nr. EC-313577 ("C-49")
Neu: Elko (Vert.-Type) 47 uF, 1oo V o. Best.-Nr. ("C-49")

Diese Änderung wird werksseitig ab August 1979 durchgeführt.

AS-oo81

2. GX-635 DB

Zur Verbesserung des Einstellbereiches der beidern Regler VR-1 und VR-2 dient die folgende Äanderung auf der Vorverstärkerplatine:

Alt: R-31, R-32 je 18 KOhm, 1/4 Watt
Neu: R-31, R-32 je 1o KOhm, 1/4 Watt

Alt: VR-1, VR-2, je 1o KOhm-Einstellregler (Best.-Nr. EV-3o5637)
Neu: VR-1, VR-2 je 2o KOhm-Einstellregler (Best.-Nr. EV-315414)

Diese Änderung wird werksseitig ab August 1979 durchgeführt.

AS-oo81

AKAI ELECTRIC CO., LTD.
P.O. BOX 21, Tokyo Airport, Japan
(12-14, 2-chome, Higashi-Kojiya, Ohta-ku,
Tokyo, Japan) TELEPHONE: TOKYO (742) 5111
CABLE: HIFIAKAI TOKYO TELEX: J26261
Printed No. 1562416 I 1ED Printed Date December 27, 1978

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SECTION 1

SERVICE MANUAL

TABLE OF CONTENTS

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II. VOLTAGE AND CYCLE CONVERSION 3
  1. VOLTAGE CONVERSION 4
  2. CYCLE CONVERSION 4
III. COMPOSITION OF VARIOUS P.C BOARDS 5

For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. TECHNICAL DATA

Track System	4 Track 2 Channel Stereo System
Reel Capacity	Up to 10″ reel
Heads	GX head for Recording × 2 GX head for Playback × 2 Erase head × 2
Motors	AC Servo motor for capstan drive × 1 AC Eddy current motor for reel drive × 2
Tape Speed	19 cm/s ±0.5% (7-1/2 ips.) 9.5 cm/s ±1.0% (3-3/4 ips.)
Wow and Flutter	Less than 0.03% WRMS, 0.07% DIN 45500 at 19 cm/s Less than 0.04% WRMS, 0.09% DIN 45500 at 9.5 cm/s
Tape Winding Time	75 sec. using 360m (1200 ft.) tape
Frequency Response	30 to 27,000 Hz ±3 dB at 19 cm/s 30 to 20,000 Hz ±3 dB at 9.5 cm/s
Signal to Noise Ratio	Better than 65 dB at 19 cm/s DIN 45500
Harmonic Distortion	Less than 0.4% at 19 cm/s
Input	MIC: 0.25 mV (input impedance 5.0 kohms) Required microphone impedance: 600 ohms Line: 70 mV (input impedance 100 kohms)
Output	Line: 0.775V at 0 VU Required load impedance: more than 20 kohms Phone: 100 mV/8 ohms at 0 VU
DIN	Input: 2 mV (input impedance 10 kohms) Output: 0.3V Required load impedance: more than 20 kohms
Dimensions	440 (W) × 483 (H) × 256 (D) mm (17.3 × 19.0 × 10.1″)
Weight	21 kg (46.4 lbs)
Power Requirements	100V, 50/60 Hz for Japan 120V, 60 Hz for USA and Canada 220V, 50 Hz for Europe except UK 240V, 50 Hz for UK and Australia 110/120/220/240V switchable 50/60 Hz for the other countries
Power Consumption	JPN 75W U/T 70W CSA, AAL 150W

*** For Improvement purposes, specifications and design are subject to change without notice.**

II. VOLTAGE AND CYCLE CONVERSION

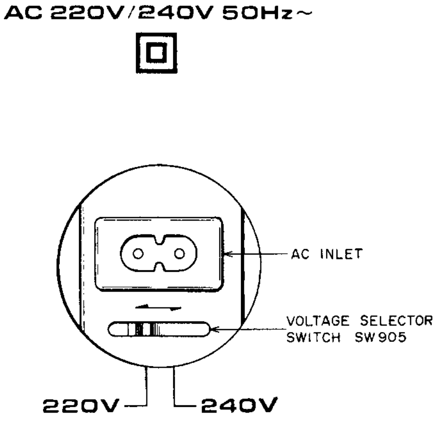

AC 220V/240V 50Hz~
AC INLET
VOLTAGE SELECTOR SWITCH SW905
220V
240V

Fig. 1 Voltage Conversion (CEE, UK Model)

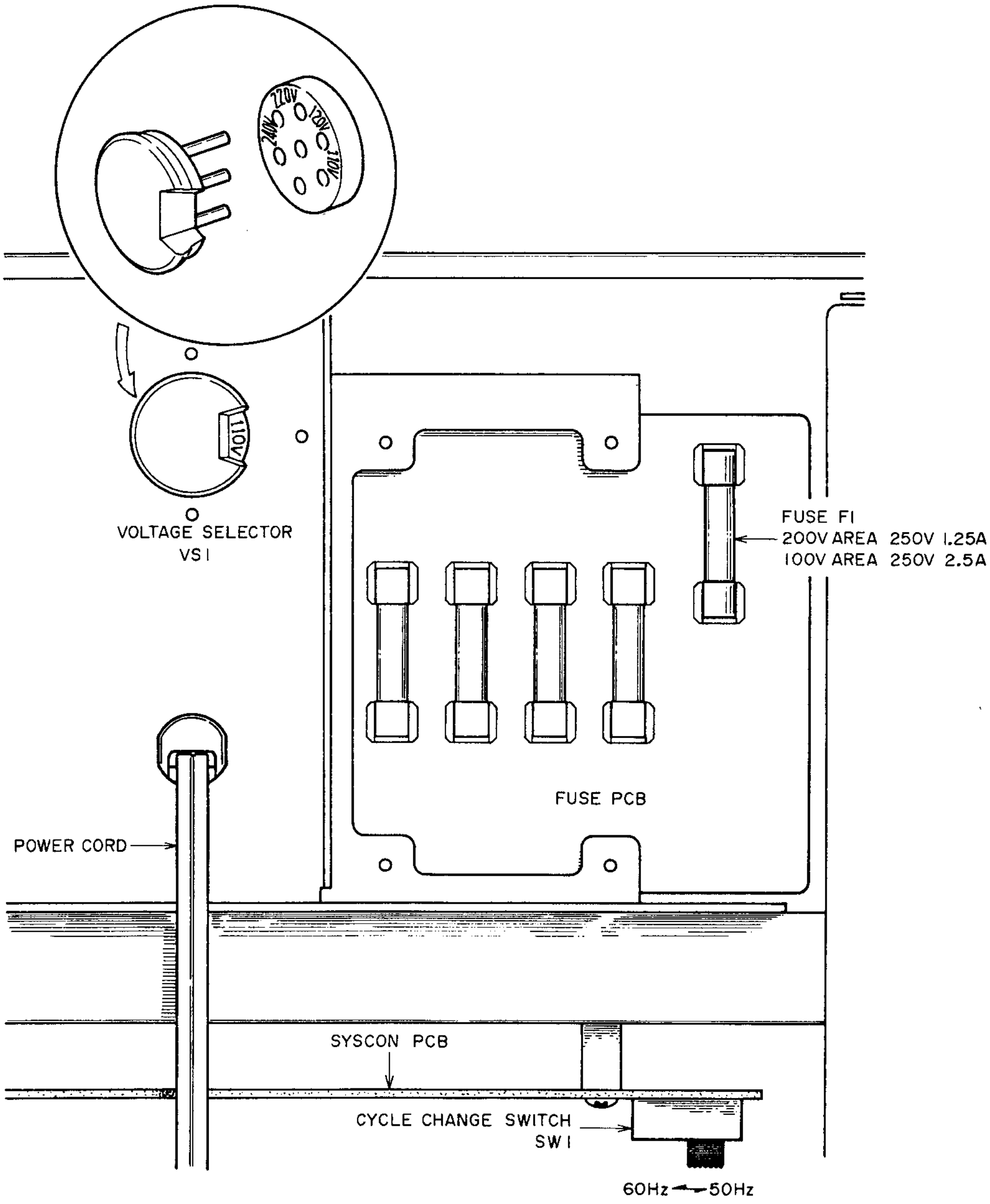

220V
120V
240V
110V
110V
VOLTAGE SELECTOR VS1
FUSE F1
200V AREA 250V 1.25A
100V AREA 250V 2.5A
FUSE PCB
POWER CORD
SYSCON PCB
CYCLE CHANGE SWITCH SW1
60Hz ⟷ 50Hz

Fig. 2 Voltage Conversion (U/T Model) and Cycle Conversion (U/T, JPN Model)

CAUTION:
When selecting the voltage or cycle, turn off the power and disconnect the power cord.

1. VOLTAGE CONVERSION (Refer to Figs. 1, 2)

1) JPN Model (100, 50/60 Hz), CSA, AAL Model (120V, 60 Hz)
   Voltage can not be switched.
2) CEE, UK Model (220/240V, 50 Hz)
   A voltage selector switch is provided under the AC inlet on the back side of machine. Select the proper voltage by this switch according to the voltage to be used. Move the switch to the left side for 220V and to the right side for 240V.
3) U/T Model (110/120/220/240V, 50/60 Hz)
   Remove the back board and find out the voltage selector and Fuse P.C Board on the upper portion of the machine. Change the position of voltage selector plugs so that the voltage to be used coincides with the voltage shown through the opening of voltage selector plug.
   The rating of fuse (F1) differs depending on the voltage to be used. Change the fuse according to the specified rating shown below.

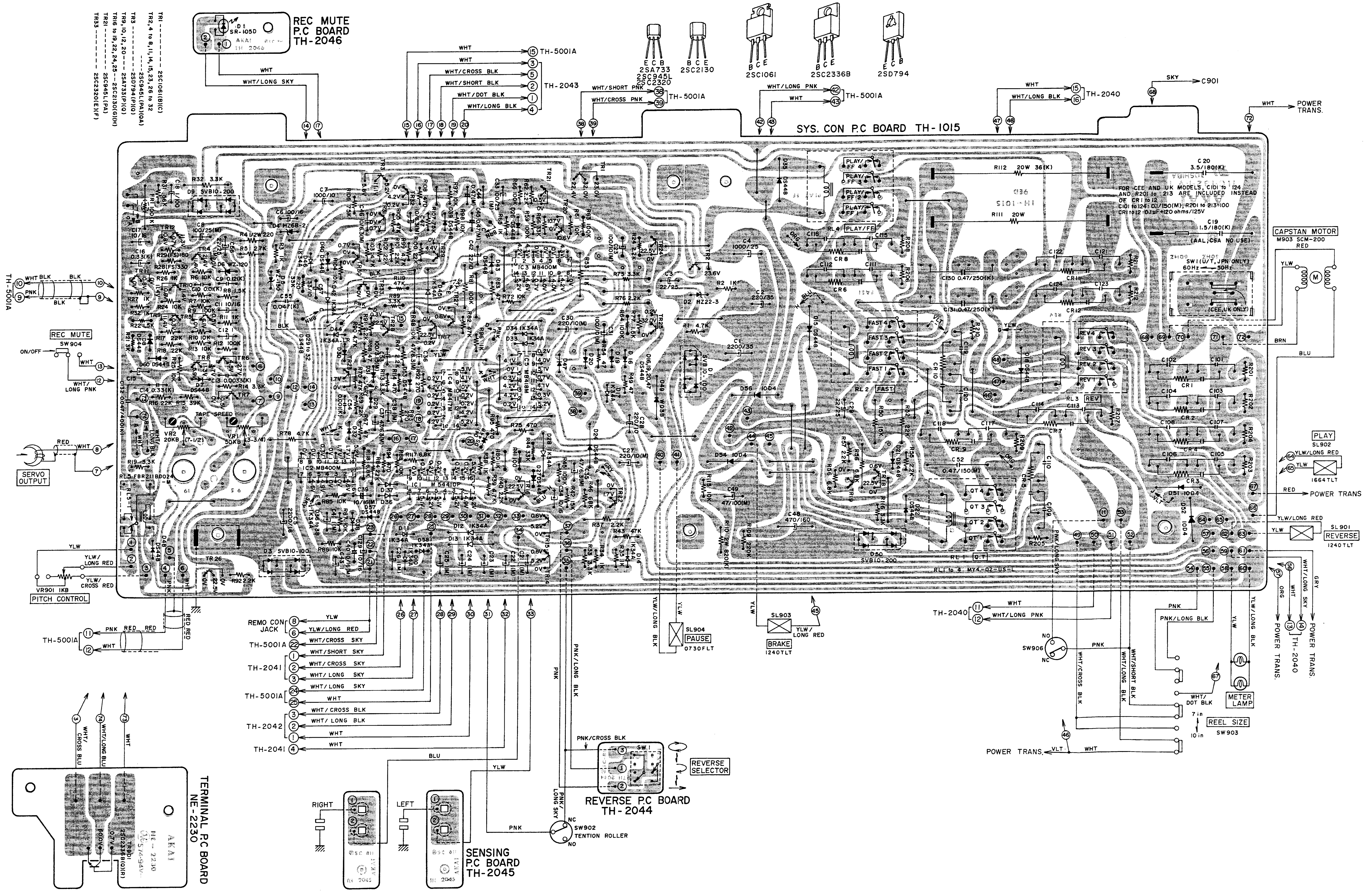
110/120V Area	250V 2.5A
220/240V Area	250V 1.25A

2. CYCLE CONVERSION (Refer to Fig. 2)

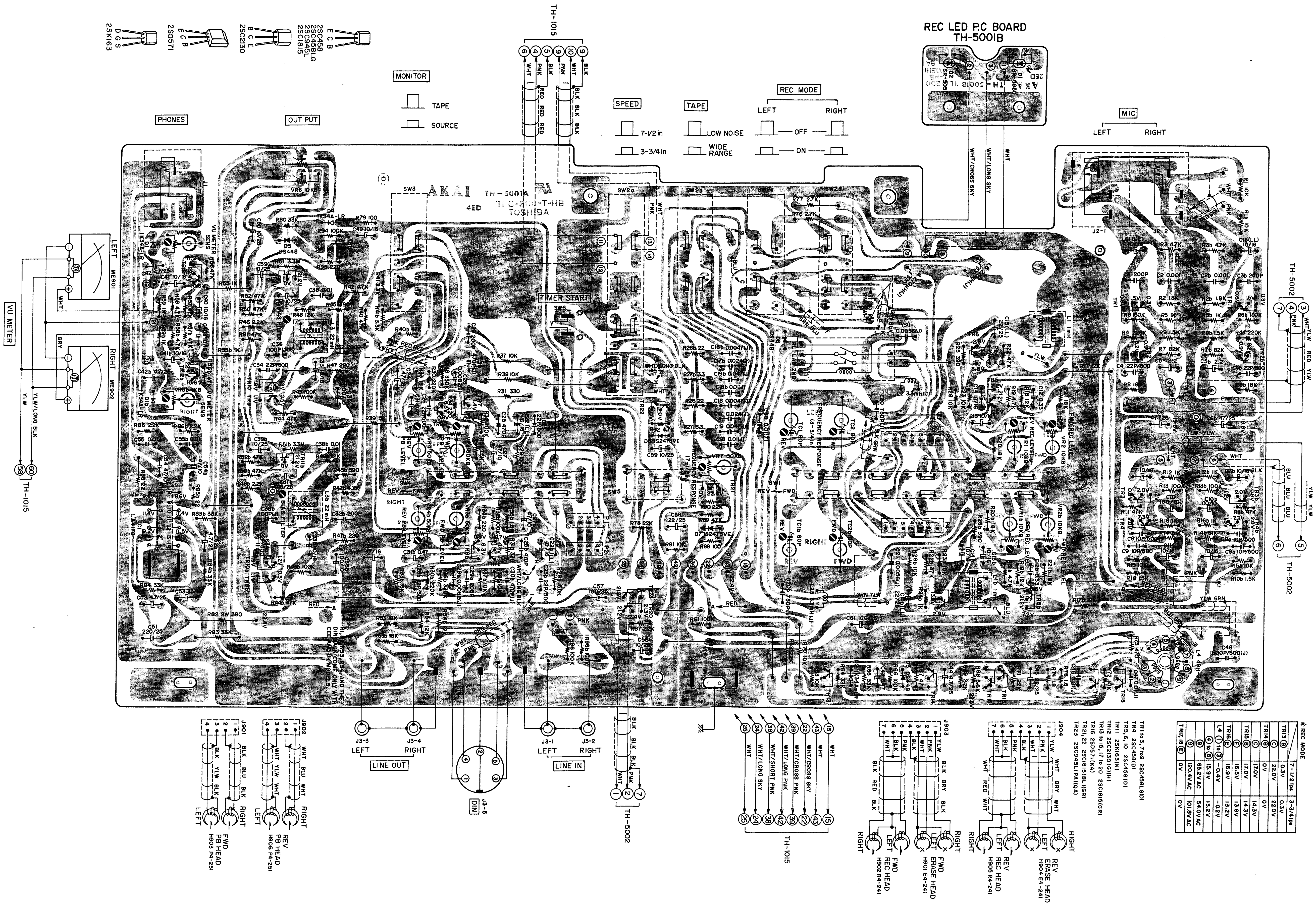
Cycle can be converted only in U/T, JPN Model. Remove the back board and select the position of switch located in the recess at right portion of Syscon P.C Board to correspond to the frequency of power to be used. Move the switch to the right for 50 Hz and to the left for the 60 Hz.

III. COMPOSITION OF VARIOUS P.C BOARDS

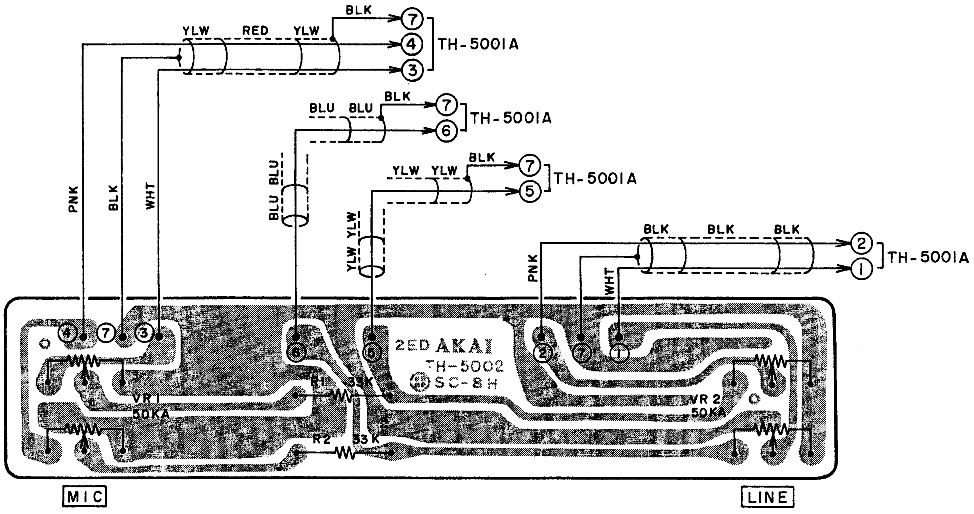
1. Sys. Con P.C Board TH-1015 (9ED), Reverse P.C Board TH-2044, Sensing P.C Board TH-2045, REC Mute P.C Board TH-2046 and Terminal P.C Board NE-2230.


TR1 ---- 2SC1061(B)(C)
TR2,4 to 8,11,14,15,23,26 to 32 --- 2SC945L(PA)(QA)
TR3 ---- 2SD794(P)(Q)
TR9,10,12,20 ---- 2SA733(P)(Q)
TR16 to 19,22,24,25 --- 2SC2130(G)(H)
TR21 ---- 2SC945L(PA)
TR33 ---- 2SC2320(E)(F)
REC MUTE P.C BOARD TH-2046
E C B
2SA733
2SC945L
2SC2320
B C E
2SC2130
B C E
2SC1061
B C E
2SC2336B
E C B
2SD794
SYS. CON P.C BOARD TH-1015
TH-5001A
TH-2043
TH-2040
C901
POWER TRANS.
CAPSTAN MOTOR
M903 SCM-200
REC MUTE
SW904
ON/OFF
SERVO OUTPUT
VR901 1KB
PITCH CONTROL
REMO CON JACK
TH-2041
TH-2042
PLAY
SL902
1664TLT
REVERSE
SL901
1240TLT
SL904
PAUSE
0730FLT
SL903
BRAKE
1240TLT
SW906
METER LAMP
REEL SIZE
SW903
7 in
10 in
REVERSE SELECTOR
REVERSE P.C BOARD TH-2044
SW902
TENSION ROLLER
RIGHT
LEFT
SENSING P.C BOARD TH-2045
TERMINAL P.C BOARD NE-2230
FOR CEE AND UK MODELS, C101 to 124 AND R201 to 213 ARE INCLUDED INSTEAD OF CR1 to 12
RL1 to 3 MY4-02-US-L

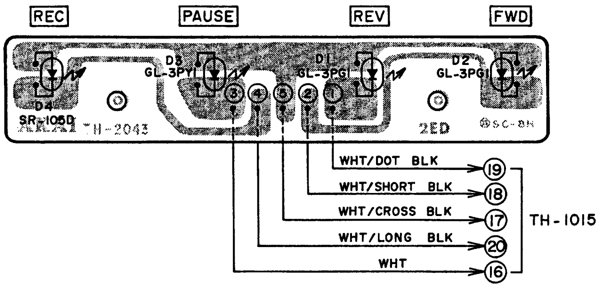
2. Pre Amp P.C Board TH-5001A (4ED) and REC LED P.C Board TH-5001B.


REC LED P.C BOARD
TH-5001B
TH-1015
MONITOR
TAPE
SOURCE
PHONES
OUT PUT
SPEED
7-1/2 in
3-3/4 in
TAPE
LOW NOISE
WIDE RANGE
REC MODE
LEFT
RIGHT
OFF
ON
MIC
LEFT
RIGHT
VU METER
LEFT
ME901
RIGHT
ME902
TIMER START
TH-5002
LINE OUT
J3-3 LEFT
J3-4 RIGHT
LINE IN
J3-1 LEFT
J3-2 RIGHT
J3-5 DIN
FWD PB HEAD
REV PB HEAD
FWD REC HEAD
FWD ERASE HEAD
REV REC HEAD
REV ERASE HEAD
REC MODE

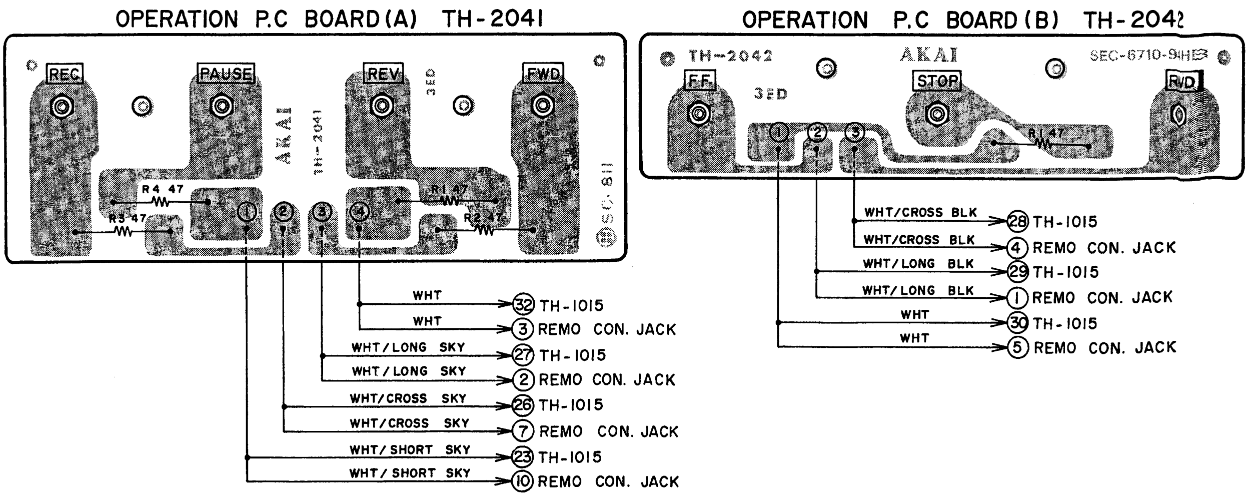
3. Volume P.C Board TH-5002 (2ED).


BLK
YLW RED YLW
⑦
④
③
TH-5001A
BLU BLU
BLK
⑦
⑥
TH-5001A
YLW YLW
BLK
⑦
⑤
TH-5001A
BLK BLK BLK
②
①
TH-5001A
PNK
BLK
WHT
BLU BLU
YLW YLW
PNK
WHT
2ED AKAI
TH-5002
SC-8H
VR1 50KA
R1 33K
R2 33K
VR2 50KA
MIC
LINE

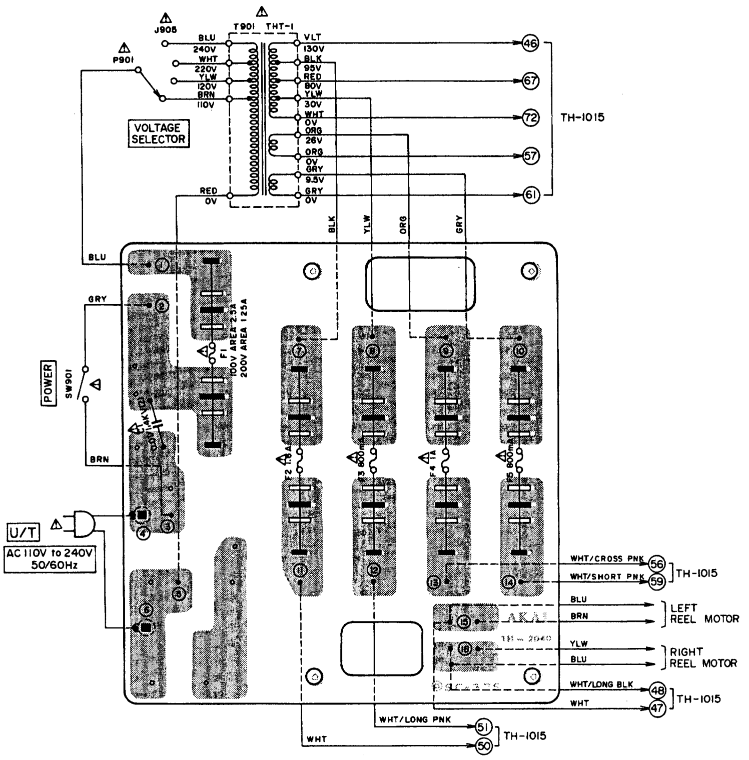
4. Direction P.C Board TH-2043 (2ED).


REC
PAUSE
REV
FWD
D3 GL-3PY1
D1 GL-3PG1
D2 GL-3PG1
D4 SR-105D
AKAI TH-2043
2ED
SC-8H
WHT/DOT BLK ⑲
WHT/SHORT BLK ⑱
WHT/CROSS BLK ⑰
WHT/LONG BLK ⑳
WHT ⑯
TH-1015

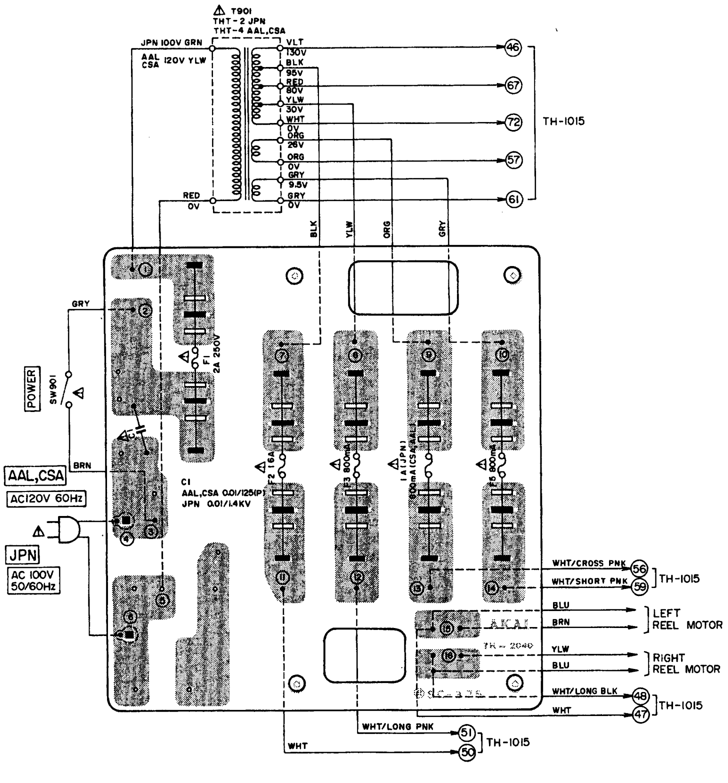
5. Operation P.C Board (A) TH-2041 (3ED) and Operation P.C Board (B) TH-2042 (3ED).


OPERATION P.C BOARD(A) TH-2041
REC
PAUSE
REV
FWD
AKAI
TH-2041
3ED
SC-8H
R4 47
R3 47
R1 47
R2 47
WHT ㉜ TH-1015
WHT ③ REMO CON. JACK
WHT/LONG SKY ㉗ TH-1015
WHT/LONG SKY ② REMO CON. JACK
WHT/CROSS SKY ㉖ TH-1015
WHT/CROSS SKY ⑦ REMO CON. JACK
WHT/SHORT SKY ㉓ TH-1015
WHT/SHORT SKY ⑩ REMO CON. JACK
OPERATION P.C BOARD(B) TH-2042
TH-2042
AKAI
SEC-6710-9HB
F.F.
STOP
R/D
3ED
R1 47
WHT/CROSS BLK ㉘ TH-1015
WHT/CROSS BLK ④ REMO CON. JACK
WHT/LONG BLK ㉙ TH-1015
WHT/LONG BLK ① REMO CON. JACK
WHT ㉚ TH-1015
WHT ⑤ REMO CON. JACK

6. Fuse P.C Board TH-2040 (U/T).


J905
P901
T901 THT-1
BLU
240V
WHT
220V
YLW
120V
BRN
110V
VOLTAGE SELECTOR
RED
0V
VLT
130V
BLK
95V
RED
80V
YLW
30V
WHT
0V
ORG
26V
ORG
0V
GRY
9.5V
GRY
0V
46
67
72
57
61
TH-1015
BLK
YLW
ORG
GRY
BLU
GRY
POWER
SW901
BRN
U/T
AC 110V to 240V 50/60Hz
F1 100V AREA 2.5A 200V AREA 1.25A
C1 0.01 1.4KV
F2 1.6A
F3 800mA
F4 1A
F5 800mA
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
AKAI
WHT/CROSS PNK
WHT/SHORT PNK
56
59
TH-1015
BLU
BRN
LEFT REEL MOTOR
YLW
BLU
RIGHT REEL MOTOR
WHT/LONG BLK
WHT
48
47
TH-1015
WHT/LONG PNK
WHT
51
50
TH-1015

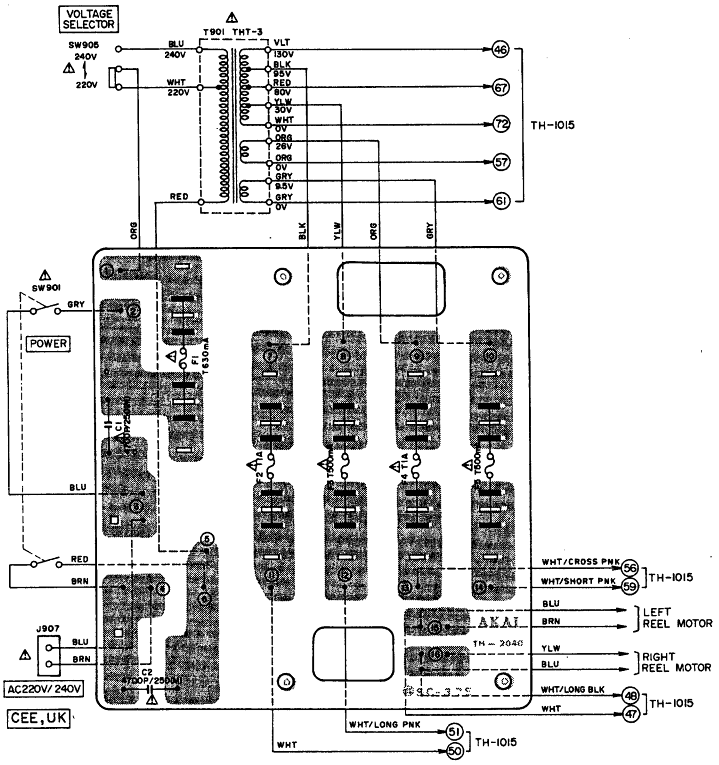
7. Fuse P.C Board TH-0240 (JPN, AAL, CSA).


T901
THT-2 JPN
THT-4 AAL,CSA
JPN 100V GRN
AAL CSA 120V YLW
RED
0V
VLT
130V
BLK
95V
RED
80V
YLW
30V
WHT
0V
ORG
26V
ORG
0V
GRY
9.5V
GRY
0V
46
67
72
57
61
TH-1015
BLK
YLW
ORG
GRY
GRY
POWER
SW901
BRN
AAL,CSA
AC120V 60Hz
JPN
AC 100V 50/60Hz
F1 2A 250V
C1
AAL,CSA 0.01/125(P)
JPN 0.01/1.4KV
F2 1.6A
F3 800mA
1A(JPN) 800mA(CSA,AAL)
F5 800mA
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
AKAI
WHT/CROSS PNK
WHT/SHORT PNK
56
59
TH-1015
BLU
BRN
LEFT REEL MOTOR
YLW
BLU
RIGHT REEL MOTOR
WHT/LONG BLK
WHT
48
47
TH-1015
WHT/LONG PNK
WHT
51
50
TH-1015

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

8. Fuse P.C Board TH-2040 (CEE, UK).


VOLTAGE SELECTOR
SW905
240V
220V
T901 THT-3
BLU
240V
WHT
220V
RED
VLT
130V
BLK
95V
RED
80V
YLW
30V
WHT
0V
ORG
26V
ORG
0V
GRY
9.5V
GRY
0V
46
67
72
57
61
TH-1015
ORG
BLK
YLW
ORG
GRY
SW901
GRY
POWER
F1
T630mA
C1
4700P/250V
BLU
RED
BRN
J907
BLU
BRN
AC220V/240V
CEE,UK
C2
4700P/250V
F2 T1A
F3 T500mA
F4 T1A
F5 T500mA
WHT/CROSS PNK
WHT/SHORT PNK
56
59
TH-1015
BLU
BRN
LEFT REEL MOTOR
AKAI
TH-2040
YLW
BLU
RIGHT REEL MOTOR
WHT/LONG BLK
WHT
48
47
TH-1015
WHT/LONG PNK
WHT
51
50
TH-1015

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

MEMO

MEMO

MEMO

SECTION 2

PARTS LIST

The composite parts of Model GX-636 except for those which have been changed as per the list below, are identical to those of Model GX-635.
Therefore, when ordering parts for this tape deck, please utilize Model GX-635 Parts List.

TABLE OF CONTENTS

1. HEAD BLOCK 16
2. ROLLER (L), (R) BLOCK 16
3. POWER SUPPLY BLOCK 16
4. ASSEMBLY BLOCK 16
5. SYS CON P.C BOARD (TH-1015) BLOCK 16
6. PRE AMP P.C BOARD (TH-5001A) BLOCK 16
7. REC LED P.C BOARD (TH-5001B) BLOCK 16
8. FINAL ASSEMBLY BLOCK 17

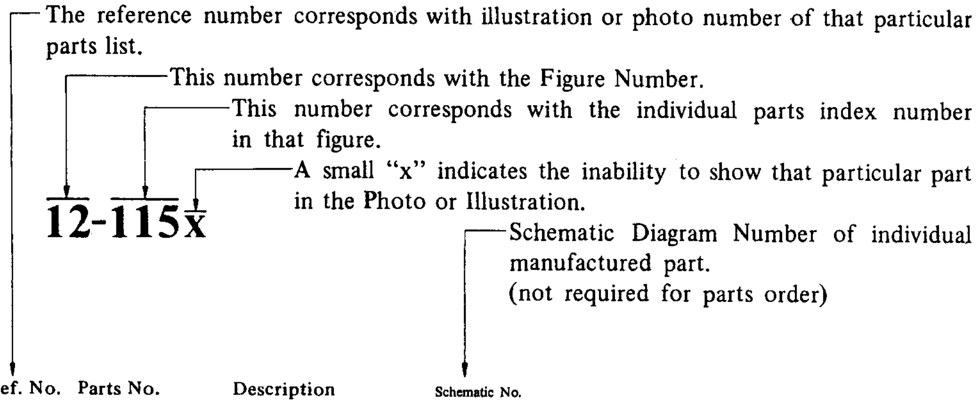
INDEX 18

Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

11-12 leer

HOW TO USE THIS PARTS LIST

1. This parts list is compiled by various individual blocks based on assembly process.
2. When ordering parts, please describe parts number, serial number, and model number in detail.
3. How to read list.



The reference number corresponds with illustration or photo number of that particular parts list.

This number corresponds with the Figure Number.

This number corresponds with the individual parts index number in that figure.

A small "x" indicates the inability to show that particular part in the Photo or Illustration.

12-115x

Schematic Diagram Number of individual manufactured part.
(not required for parts order)

Ref. No.	Parts No.	Description	Schematic No.
		FLYWHEEL BLOCK #13	
12-115x	800425	Flywheel Block Assy. Comp.	RDG #13
12-116	244506	Flywheel Only	RD 233
12-117x	244754	Felt, Flywheel	RD 275
12-118	251324	Main Metal Case	RD 236
12-119	253080	Main Metal	RD 237

4. The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of components of the Schematic Diagram or Service Manual.
5. The indications of Resistors and Capacitors in the photos of P.C. Board are being eliminated.
6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts Table of P.C. Board.
7. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List.
   It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index. (meaning of ref. no. outlined in Item 3 above).
8. Utilize separate "Price List for Parts" to determine unit price. The most simple method of finding parts Price is to utilize the reference number.

CAUTION:

1. **When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.**
2. **Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.**
3. **Because parts number and parts unit supply in the Preliminary Service Manual (Basic Parts List) may be partially changed, please use this parts list for all future reference.**

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMEMNDED PARTS.

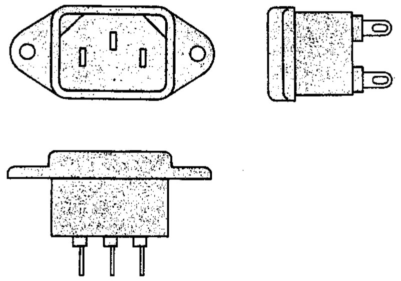
AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

AC INLET SYSTEM

This model is equipped with an AC INLET SYSTEM. Please refer to the AC INLET SYSTEM CHART below for the specific type. By the AC INLET SYSTEM, AC (mains) cord can be connected to and disconnected from the model because the model is provided with socket exclusively for AC (mains) cord on its main body.
Please note, however, that certain models are not equipped with this system and has a built-in AC (mains) cord as before.

AC INLET SYSTEM CHART

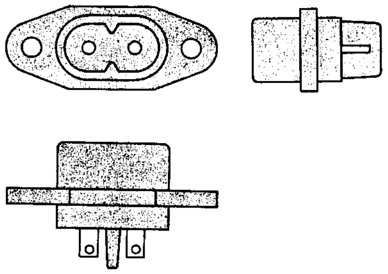
CLASS I

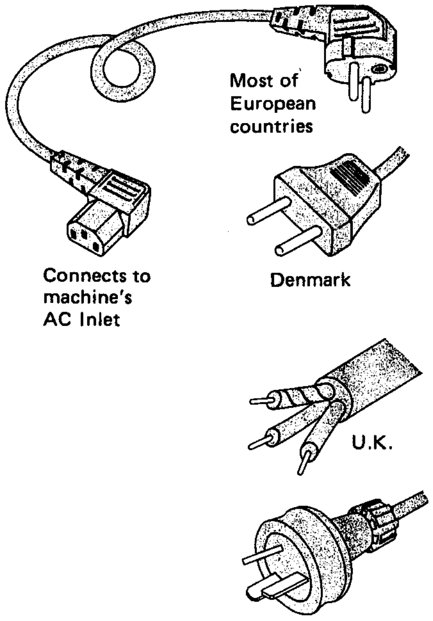


Picture 1
AC INLET
to be
installed
on machines

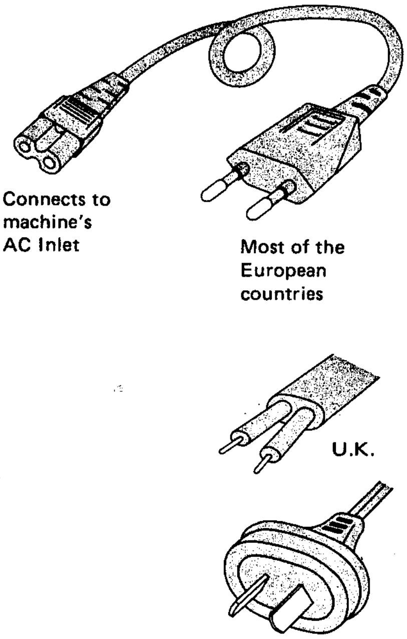
CLASS II

▣ This mark indicating double insulation will be attached to machine's rear panel




Most of European countries
Connects to machine's AC Inlet
Denmark
U.K.
Australia differs according to wall socket

Picture 2
AC (mains)
cord


Connects to machine's AC Inlet
Most of the European countries
U.K.
Australia differs according to wall socket

Parts List for AC (mains) Cord Set

Standard		Description	Type of AC Inlet	Parts No.
Class I	CEE	Cord Set CEE (3 cores)	3P	EW302993
	UK	Cord Set UK (3 cores)	3P	EW302994
	SAA	Cord Set SAA (3 cores)	3P	EW302996
	U/T	Cord Set U/T (3 cores)	3P	EW302646
Class II	CEE	Cord Set CEE (2 cores)	2P	EW638144
	UK	Cord Set UK (2 cores)	2P	EW302995
	SAA	Cord Set SAA (2 cores)	2P	EW302991
	U/T	Cord Set U/T (2 cores)	2P	EW302899

1. HEAD BLOCK

Ref. No.	Parts No.	Description
1-1	ZG540584	ANGLE ADJUST SPRING (G)
1-2	HPH1004A010A	HEAD P4-251

2. ROLLER (L), (R) BLOCK

Ref. No.	Parts No.	Description
2-1	BZT1008A190B	ROLLER (L) BLK GX-635D-BL
2-2	BZT1008A220B	ROLLER (R) BLK GX-635D-BL
2-3	MZ315375	DAMPER GEAR BASE
2-4	MZ315374	DAMPER GEAR
2-5	MS315376	DAMPER SHAFT
2-6	ZS419670	PAN30X12STL CMT
2-7	MZ315373	ARM GEAR
2-8	MI315558	TENSION WHEEL (BL)

3. POWER SUPPLY BLOCK

Ref. No.	Parts No.	Description
3-1	EC314688	⚠ C CE V FZ 103P 125AC
3-2	EC327382	⚠ C MP V 472M 250AC
3-3	ES306430	⚠ SW SLIDE J-S4013#01 01-2
3-4	ET308947	TR 2SC2336B Q, R
3-5	EF562691	⚠ FUSE TLC A 250V 2.50A
3-6	EF310455	⚠ FUSE TLC A 250V 1.25A
3-7	EF300592	⚠ FUSE EAWK T 250V 0.63A
3-8	EF300584	⚠ FUSE EAK T 250V 1A
3-9	EF300591	⚠ FUSE EAWK T 250V 0.50A
3-10	EF300584	⚠ FUSE EAK T 250V 1A
3-11	EF300591	⚠ FUSE EAWK T 250V 0.50A

4. ASSEMBLY BLOCK

Ref. No.	Parts No.	Description
4-1	MC305642	COUNTER MP-499
4-2	MC305652	COUNTER MP-499 (BL)
4-3	ED318988	D LED SR505D RED
4-4	ED249377	D LED GL-3AR1 RED

5. SYSCON P.C BOARD (TH-1015) BLOCK

Ref. No.	Parts No.	Description
5-IC2,3	EI304165	IC MB400M
5-IC4	EI305238	IC MB417M
5-IC5	EI304166	IC MB418M
5-TR2	ET200505	TR 2SC2603 E, F
5-TR4to8	ET200505	TR 2SC2603 E, F
5-TR11	ET200505	TR 2SC2603 E, F
5-TR14,15	ET200505	TR 2SC2603 E, F
5-TR23	ET200505	TR 2SC2603 E, F
5-TR26to33	ET200505	TR 2SC2603 E, F
5-D1	ED330319	D SILICON DBA10B 100/1.0A
5-D3	ED330319	D SILICON DBA10B 100/1.0A
5-D5	ED539976	D ZENER H WZ-130
5-D7,8	ED200468	D SILICON V DS448 VB3
5-D9	ED326168	D SILICON 1D4B1 200/1.5A
5-D15	ED301911	D SILICON H DS448
5-D16	ED200468	D SILICON V DS448 VB3
5-D18	ED301911	D SILICON H DS448
5-D19to22	ED200468	D SILICON V DS448 VB3
5-D24	ED301911	D SILICON H DS448
5-D26,27	ED200468	D SILICON V DS448 VB3
5-D29to32	ED200468	D SILICON V DS448 VB3
5-D35	ED301911	D SILICON H DS448
5-D41	ED200468	D SILICON V DS448 VB3
5-D43	ED200468	D SILICON V DS448 VB3
5-D47,48	ED200468	D SILICON V DS448 VB3
5-D50	ED326168	D SILICON 1D4B1 200/1.5A
5-D53	ED200468	D SILICON V DS448 VB3
5-D57	ED200468	D SILICON V DS448 VB3
5-D58	ED308952	D GERMA V 1K34A-LR F07
5-D60	ED200468	D SILICON V DS448 VB3
5-RL1to4	EP300132	RELAY POWER MY4-02-US-L 4TR 24V
5-R28	ER330680	⚠ R CB H FS RDS 1/4W 331J
5-R29	ER330677	⚠ R CB H FS RDS 1/4W 181J
5-R111	ER315356	R CT P 20W 551K
5-FR1	ER561216	⚠ R FUSE FRN50 200MA 1/4W 101K
5-C1	EC316231	C EC V CUT SM 222M 35.0DC
5-C4	EC316188	C EC V CUT SM 102 25.0DC
5-C5	EC316186	C EC V CUT SM 222M 16.0DC
5-C7	EC326588	C EC V CUT SM 102M 10DC
5-C39,40	EC313534	C EC V F05 NP 04D 100M 16.0DC
5-C48	EC301912	C EC V SNP NM 471 160DC
5-C49	EC321297	C EC V CUT H 470M 100DC
5-C101to124	EC201390	C MMY V MEU R10M 150AC
5-C130,131	EC316194	C MMY V CUT CF921 474K 250DC
5-C132	EC321088	C MMY V CF921 473K 400DC
5-CR1to12	ER310373	SPARK QUENCHER NSK115 104C+121R 125AC

6. PRE AMP P.C BOARD (TH-5001A) BLOCK

Ref. No.	Parts No.	Description
6-1	BAT1008A150C	PRE AMP PC BLK GX-636 (U)
6-2	BAT1008A150D	PRE AMP PC BLK GX-636 (E)
6-TR11	ET201313	TR FET 2SK163 K
6-TR13to15	ET308980	TR 2SC1815 GR
6-TR17to23	ET308980	TR 2SC1815 GR
6-D3	ED200468	D SILICON V DS448 VB3
6-D5to8	ED200468	D SILICON V DS448 VB3
6-VR1,2	EV520806	R S-FIX H V8K4-1 3P 103
6-VR3,4	EV464220	R S-FIX H V8K4-1 3P 503
6-VR5	EV478686	R S-FIX H V8K4-1 3P 102
6-VR7	EV464218	R S-FIX H V8K4-1 3P 303
6-C30	EC310440	C STY V F05 CQF09 471J 50DC

7. REC LED P.C BOARD (TH-5001B) BLOCK

Ref. No.	Parts No.	Description
7-D1,2	ED318988	D LED SR505D RED

8. FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description
8-1	BZT1011A050A	HEAD COVER BLK GX-636
8-2	BZT1011A050B	HEAD COVER BLK GX-636-BL
8-3	SC305096	HEAD COVER BASE (B)
8-4	SC305097	HEAD COVER BASE (B)-BL
8-5	ML308810	HEAD COVER HOLDER (A)
8-6	ML308811	HEAD COVER HOLDER (B)
8-7	ZS379350	PAN30X06STL CMT
8-8	BDT1011A040A	MECHA PANEL BLK GX-636
8-9	BDT1011A040B	MECHA PANEL BLK GX-636-BL
8-10	SE315931	REEL TABLE ESCATCHEON (2-C)
8-11	SE315577	REEL TABLE ESUTCHEON (2-D)
8-12	ZW575730	N SPEED 30
8-13	SE305035A	COUNTER ESCUTCHEON
8-14	SE305035B	COUNTER ESCUTCHEON (BL)
8-15	BDB601307	AMP PANEL PART
8-16	BDB601308	AMP PANEL (BL) PART
8-17	SBB601311	OPERATE BUTTON (F) PART
8-18	SBB314002	OPERATE BUTTON (A-BL) PART
8-19	SBB601313	OPERATE BUTTON (G) PART
8-20	SBB314004	OPERATE BUTTON (B-BL) PART
8-21	SBB601314	OPERATE BUTTON (H) PART
8-22	SBB314005	OPERATE BUTTON (C-BL) PART
8-23	SBB601315	OPERATE BUTTON (I) PART
8-24	SBB314006	OPERATE BUTTON (D-BL) PART
8-25	SBB601316	OPERATE BUTTON (J) PART
8-26	SBB314003	OPERATE BUTTON (E-BL) PART
8-27	TC329303	MASK (B)
8-28	SZ315826	MEMORY RING
8-29	SZ315827	MEMORY RING (BL)
8-30	TC305023	MEMORY RING HOLDER
8-31	EM315919	METER VU KL-293C-6 0.250MA
8-32	EM315603	METER VU KL-293C-5 0.250MA
8-33	TC310497	MASK (B)
8-34	SP304928A	BOTTOM COVER
8-35	SP304928B	BOTTOM COVER (BL)
8-36	SAB301411	SQUARE FOOT PART GX-215D
8-37	ZS413234	SCREW, PAN 4 × 12
8-38	SP304933A	UPPER COVER
8-39	SP304933B	UPPER COVER (BL)
8-40	ZS331181	BT BID30 × 08STL NI3
8-41	ZS331182	BT BID30 × 08STL BNI
8-42	ZS325495	T2BR30 × 06STL CMT
8-43	SP308805	SIDE PLATE
8-44	SP315587	SIDE PLATE (BL)
8-45	SP305022	SIDE PLATE (B)
8-46	ZS318423	SCREW (B), W/SPOT FACING WASHER
8-47	ZS613901	PANEL SCREW
8-48	ZS306435	PANEL SCREW (C)
8-49	ZW308796	PANEL WASHER
8-50	ZW315571	PANEL WASHER (BL)
8-51	SK315822	DOUBLE KNOB (UPPER)
8-52	SK315823	DOUBLE KNOB (UPPER-BL)
8-53	SK315824	DOUBLE KNOB (LOWER)
8-54	SK315825	DOUBLE KNOB (LOWER-BL)
8-55	SK305024A	KNOB (D)
8-56	SK305024B	KNOB (D):BL
8-57	SK305025A	KNOB (C)
8-58	SK305025B	KNOB (C)-BL
8-59	SK305026A	KNOB (A)
8-60	SK305026B	KNOB (A)-BL
8-61	SK305027A	KNOB (B)
8-62	SK305027B	KNOB (B)-BL
8-63	SKB601364	PINCH ROLLER CAP (D) PART
8-64	SKB601365	PINCH ROLLER CAP (E) PART
8-65	SP305098B	BACK BOARD GX-636 (U)
8-66	SP305098J	BACK BOARD GX-636 (U)-BL
8-67	SP305098A	BACK BOARD GX-636 (J)
8-68	SP305098H	BACK BOARD GX-636 (J)-BL
8-69	SP305098D	BACK BOARD GX-636 (C, A)
8-70	SP305098L	BACK BOARD GX-636 (C, A)-BL
8-71	SP305098C	BACK BOARD GX-636 (E, B, S)
8-72	SP305098K	BACK BOARD GX-636 (E, B, S)-BL
8-73	ZS297641	T2BID30 × 08STL CMT PW100
8-74	ZW305013	RV POP32
8-75	SB200915A	BUTTON
8-76	SB200915B	BUTTON (BL)
8-77	SB315828	BUTTON (B)
8-78	SB315829	BUTTON (B-BL)
8-79	EW315767	⚠ AC CORD 2 CORES KP-419C/KS-15 E
8-80	EW322400	⚠ AC CORD 2 CORES GTBS-2F/KS-15 B
8-81	EW322401	⚠ AC CORD 2 CORES KP-560/S-15 S

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SECTION 3

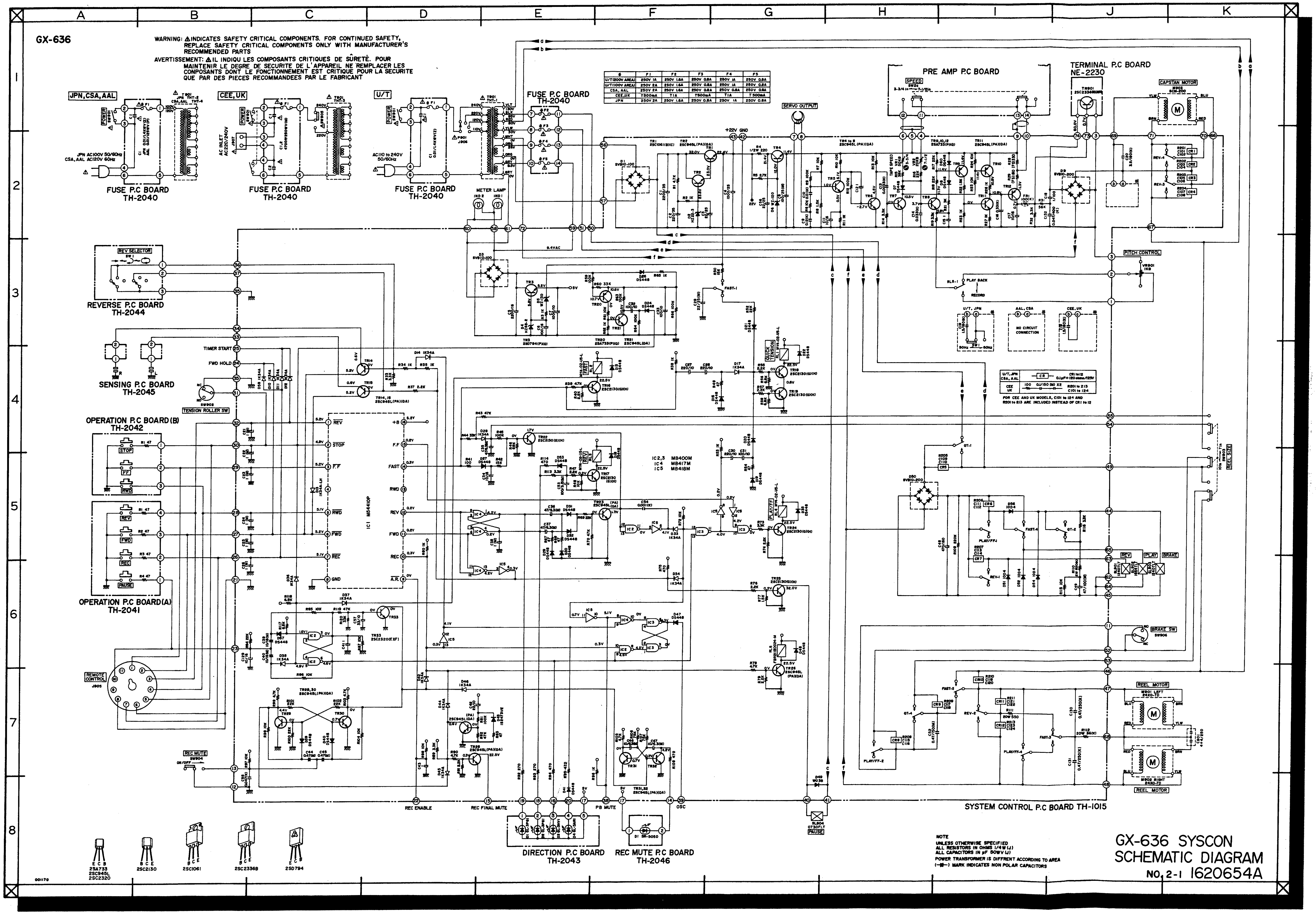
SCHEMATIC DIAGRAM

1. GX-636 NO. 2-1 1620654A SCHEMATIC DIAGRAM
2. GX-636 NO. 2-2 1620655A SCHEMATIC DIAGRAM

GX-636

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

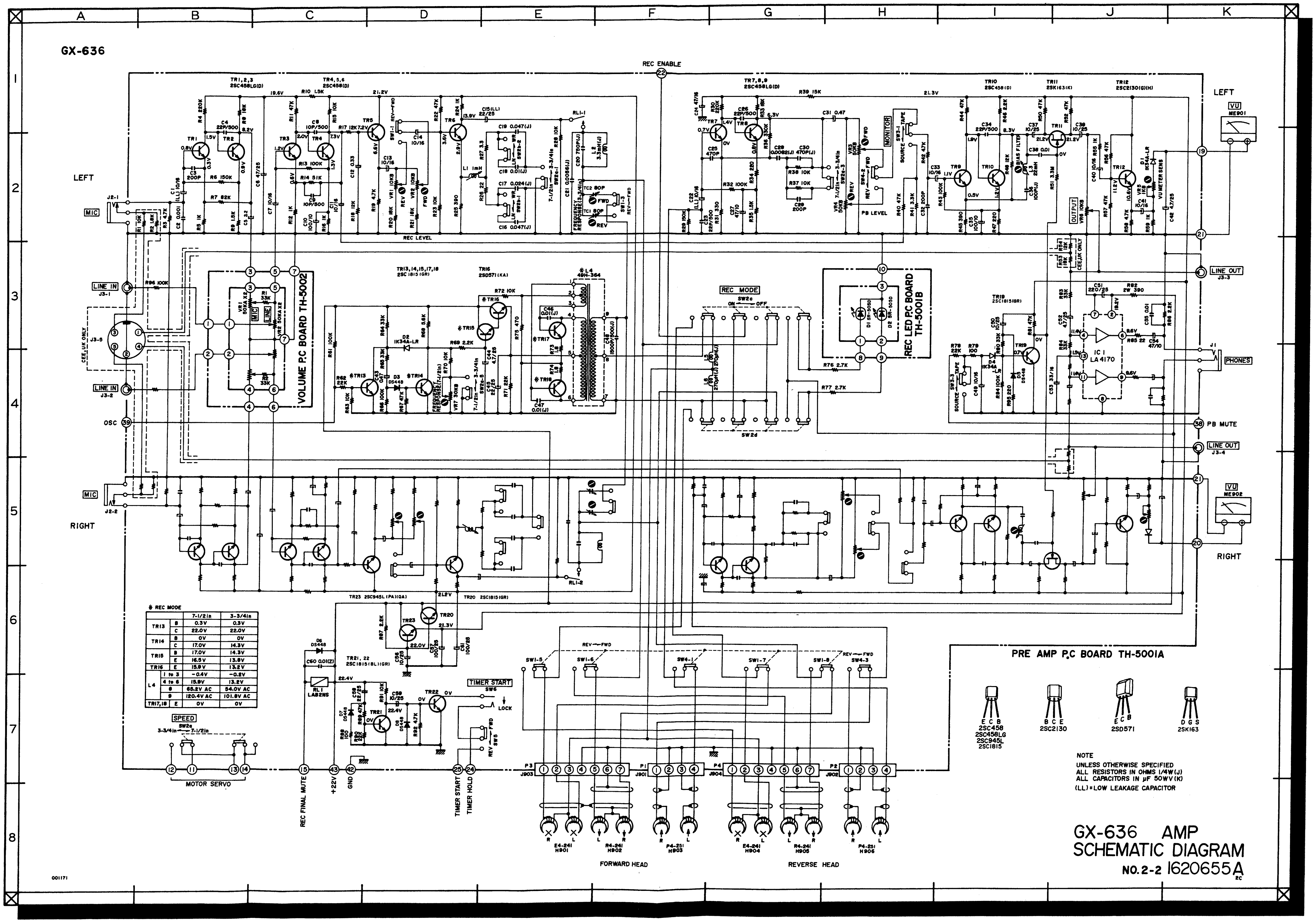

JPN,CSA,AAL
CEE,UK
U/T
FUSE P.C BOARD TH-2040
PRE AMP P.C BOARD
TERMINAL P.C BOARD NE-2230
CAPSTAN MOTOR
SERVO OUTPUT
SPEED
METER LAMP
REV SELECTOR
REVERSE P.C BOARD TH-2044
SENSING P.C BOARD TH-2045
TENSION ROLLER SW
OPERATION P.C BOARD (B) TH-2042
STOP
FF
RWD
REV
FWD
REC
PAUSE
OPERATION P.C BOARD (A) TH-2041
REMOTE CONTROL
REC MUTE
IC1 M54410P
IC2,3 M8400M
IC4 M8417M
IC5 M8418M
PITCH CONTROL
REEL SIZE
BRAKE SW
REEL MOTOR
REC ENABLE
REC FINAL MUTE
PB MUTE
OSC
PAUSE
DIRECTION P.C BOARD TH-2043
REC MUTE P.C BOARD TH-2046
2SA733
2SC945L
2SC2320
2SC2130
2SC1061
2SC2336B
2SD794
001170

⚠	F1	F2	F3	F4	F5
U/T(200V AREA)	250V 1A	250V 1.6A	250V 0.8A	250V 1A	250V 0.8A
U/T(100V AREA)	250V 2A	250V 1.6A	250V 0.8A	250V 1A	250V 0.8A
CSA, AAL	250V 2A	250V 1.6A	250V 0.8A	250V 0.8A	250V 0.8A
CEE,UK	T500mA	T1A	T500mA	T1A	T500mA
JPN	250V 2A	250V 1.6A	250V 0.8A	250V 1A	250V 0.8A

SYSTEM CONTROL P.C BOARD TH-1015

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN µF 50WV (J)
POWER TRANSFORMER IS DIFFRENT ACCORDING TO AREA
(—⫴—) MARK INDICATES NON POLAR CAPACITORS

GX-636 SYSCON
SCHEMATIC DIAGRAM
NO. 2-1 1620654A


A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
GX-636
REC ENABLE
22
TR1,2,3
2SC458LG(D)
TR4,5,6
2SC458(D)
TR7,8,9
2SC458LG(D)
TR10
2SC458(D)
TR11
2SK163(K)
TR12
2SC2130(G)(H)
LEFT
RIGHT
MIC
J2-1
J2-2
LINE IN
J3-1
J3-2
J3-5
CEE,UK ONLY
OSC
39
VOLUME P.C BOARD TH-5002
REC LEVEL
TR13,14,15,17,18
2SC1815(GR)
TR16
2SD571(KA)
L4
49H-364
REC MODE
SW2e
ON
OFF
SW2d
REC LED P.C BOARD TH-5001B
MONITOR
SOURCE
TAPE
PB LEVEL
OUTPUT
FREQUENCY RESPONSE
BIAS FILTER
VU METER SENS
CEE,UK ONLY
TR19
2SC1815(GR)
IC1
LA4170
LINE OUT
J3-3
J3-4
J1
PHONES
PB MUTE
38
VU
ME901
ME902
19
21
20
RL1-1
RL1-2
TR23 2SC945L(PA)(QA)
TR20 2SC1815(GR)
TR21, 22
2SC1815(BL)(GR)
RL1
LA82HS
TIMER START
SW6
LOCK
FWD
REV
SPEED
SW2a
3-3/4in
7-1/2in
12
11
13
14
MOTOR SERVO
15
REC FINAL MUTE
43
+22V
42
GND
25
24
TIMER START
TIMER HOLD
SW1-5
SW1-6
SW4-1
SW1-7
SW1-8
SW4-3
REV
FWD
P3
J903
P1
J901
P4
J904
P2
J902
E4-241
H901
R4-241
H902
P4-251
H903
E4-241
H904
R4-241
H905
P4-251
H906
FORWARD HEAD
REVERSE HEAD
PRE AMP P.C BOARD TH-5001A
E C B
2SC458
2SC458LG
2SC945L
2SC1815
B C E
2SC2130
E C B
2SD571
D G S
2SK163
001171

✻ REC MODE

		7-1/2in	3-3/4in
TR13	B	0.3V	0.3V
	C	22.0V	22.0V
TR14	B	0V	0V
	C	17.0V	14.3V
TR15	B	17.0V	14.3V
	E	16.5V	13.8V
TR16	E	15.9V	13.2V
L4	1 to 3	-0.4V	-0.2V
	4 to 6	15.9V	13.2V
	8	65.2V AC	54.0V AC
	9	120.4V AC	101.8V AC
TR17,18	E	0V	0V

NOTE

UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(K)
(LL)=LOW LEAKAGE CAPACITOR

GX-636 AMP
SCHEMATIC DIAGRAM

NO.2-2 1620655A 2C

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